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Deepwater, Deep Ties, Deep Trouble: A State-Corporate Environmental Crime Analysis of the 2010 Gulf of Mexico Oil Spill

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DEEPWATER, DEEP TIES, DEEP TROUBLE: A STATE-CORPORATE
ENVIRONMENTAL CRIME ANALYSIS OF THE
2010 GULF OF MEXICO OIL SPILL

by

Elizabeth A. Bradshaw

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Philosophy
Department of Sociology
Advisor: Ronald C. Kramer, Ph.D.

Western Michigan University
Kalamazoo, Michigan
August 2012

THE GRADUATE COLLEGE
WESTERN MICHIGAN UNIVERSITY
KALAMAZOO, MICHIGAN

Date June 29, 2012

WE HEREBY APPROVE THE DISSERTATION SUBMITTED BY

Elizabeth A. Bradshaw


ENTITLED Deepwater, Deep Ties, Deep Trouble: A State-Corporate Environmental
Crime Analysis of the 2010 Gulf of Mexico Oil Spill

AS PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

DEGREE OF Doctor of Philosophy

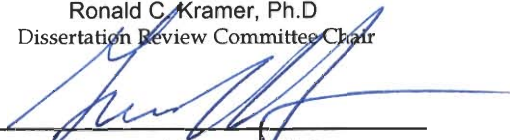
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Elizabeth A. Bradshaw, Ph.D.

Western Michigan University, 2012

The 2010 Gulf of Mexico oil spill was one of the worst environmental disasters of all time. Using the concept of state-corporate environmental crime, this project applies a case study analysis of secondary data sources including publicly available government reports, corporate documents, academic sources and journalistic accounts to examine the causes of the blowout and the response to the spill. Building on Michalowski and Kramer's Integrated Theoretical Model of State-Corporate Crime, this study introduces an additional level of analysis- that of the industry- between the organizational and institutional levels.

The causes of the Deepwater Horizon explosion are rooted both in the history of federal development of the offshore oil industry, and the organizational actions of the corporations most directly involved: BP, Transocean and Halliburton. Undertaken in close coordination between the federal government and BP, alongside privately contracted oil spill response organizations, the response to the spill can be classified as a state-facilitated corporate cover up of the environmental crimes in the Gulf. This was accomplished through scientific propaganda and censorship of images and information.

Working together, BP and the Obama administration sought to downplay the size of the spill and its effects. An unprecedented amount of toxic chemical dispersants were applied at the surface and directly at the wellhead in an effort to conceal the amount of oil. Federal restrictions blocked access to cleanup operations, beaches and airspace, thereby limiting public visibility of the spill. Policing the media blackout was an intricate matrix of federal and local law enforcement, and private security companies hired by BP. Suppression of images and information helped to contain public outrage while allowing BP and the federal government to carry out dangerous response measures with little oversight. As this study demonstrates, the most recent spill is not an isolated instance of state-corporate environmental crime, but rather is the result of the criminogenic structure of the deepwater oil industry.

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ACKNOWLEDGMENTS

I must extend my sincerest gratitude to my dissertation adviser Dr. Ron Kramer and the other members of my committee, Dr. Greg Howard and Dr. Susan Carlson. Without their mentorship, support, and encouragement not only on this dissertation but for the duration of my graduate education, I would not be the critical scholar that I am today. Additional thanks to the outside member of my committee Dr. Ray Michalowski for his enthusiasm and contributions to this project. Furthermore, the generous support provided by the Dissertation Completion Fellowship from the Graduate College at Western Michigan University has been essential in allowing me to craft such a solid dissertation. Lastly, I am incredibly grateful for my family and friends who have helped keep me grounded throughout this disorienting educational journey.

Elizabeth A. Bradshaw

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SECTION I: INTRODUCTION AND BACKGROUND

CHAPTER ONE: INTRODUCTION AND BACKGROUND

Introduction

In the wake of the blowout of Union Oil's Platform A off the coast of Santa Barbara in 1969, sociologist Harvey Molotch (1970) used the event to examine the current power relations between government, the oil industry and the people in the article "Oil in Santa Barbara and Power in America." He argued that all technological "accidents" provide a basis for insight into the true nature of the structure of power relations in society that would otherwise be unobservable to an outsider. The insights and conclusions provided by Molotch (1970) into the power arrangements between the oil industry, government and the knowledge production industry (including universities and the media) are invaluable for contextualizing the focus of this study, the 2010 Gulf of Mexico oil spill and the ensuing response. A brief examination of government and industry interactions surrounding the Santa Barbara spill forty years prior to the Deepwater Horizon catastrophe can offer a useful starting point for assessing whether these structures of power have changed over time, and if so, in what ways.

Oil in Santa Barbara and Power in America

Not long after federal leasing was opened along the Pacific Coast in 1966 and 1968, Union Oil's Platform A exploded on January 28, 1969 off the coast of Santa Barbara. The well continued to gush for ten days until it was stopped. However, a second explosion occurred on February 12 causing oil to leak until March 3, yet the

well continued to seep oil for more than seven months. In total, three million gallons of oil eventually spilled into the Santa Barbara Channel, defiling 150 miles of coastline and causing increased air pollution. Following the initial explosions, the U.S. Coast Guard, who patrolled the Santa Barbara Channel regularly, was slow to respond and did not notify nearby citizens of the spill.

The response from the federal government through multiple agencies was consistently in support of the oil companies at every stage. Molotch (1970:134) argues that:

In the end, it was not simply Interior, its U.S. Geological Survey and the President which either supported or tacitly accepted Oil's public relations tactics. The regulatory agencies at both national and state level, by action, inaction and implication had the consequences of defending Oil at virtually every turn.

Although the spill had the effect of organizing public resistance to California offshore drilling, the close and powerful Interior-oil industry relationship trumped the concerns of the people. Through a series of media and public relations campaigns, the oil companies consistently minimized the damage to the beaches while applauding the success of Union Oil's cleanup efforts (1970:133). Both government and corporate officials implied that the spill response and the beach cleanup operations were effective even though citizens knew otherwise. Rather, oil persisted in coming ashore and restoration efforts were necessary for years to come.

Members of the Santa Barbara community were outraged at the oil companies, but were initially confident that justice would be served by government officials. As their elected representatives at the local, state and federal level remained inactive, the close connections between the oil industry and the government soon became apparent. Following the spill, Congress decided to do little to halt offshore drilling. While the Department of Interior announced it would enact stricter regulation to control the

offshore industry, high ranking engineers at the agency confided to Congressional investigators that all the safeguards in the world could not prevent another such disaster (1970:136). Caving to pressure from the oil industry, the Department of Interior rescinded its restrictions and permitted continued offshore leasing.

Furthermore, government and corporate officials also worked to suppress the damage done to wildlife as a result of the spill. Funded by money from the oil companies, the two centers for cleaning birds and other marine life provided both government and corporate officials with authoritative statistics of dead and injured wildlife resulting from the spill. However, the number of fatalities of wildlife only included deaths that occurred at the centers themselves. Over the duration of the spill, there was continued debate surrounding the true extent of the harm to wildlife. Large fish kills and scores of dead whales washed ashore and while they were publicly acknowledged, no connection was made to the oil pollution (1970:134).

As the crisis continued, it was revealed that the Department of Interior, particularly the U.S. Geological Survey, had severely underestimated the size of the spill despite independent calculations that suggested the spill was ten times larger (1970:133). At the time, people were struck by the contrast of the sophisticated technology used to discover and extract the oil compared to the primitive cleanup technology which included skimming and collecting the oil, chemical dispersants, and injecting massive amounts of cement and debris to plug the well (1970:135).

As Union Oil's attempts to seal the well were proving unsuccessful, a presidential commission of "distinguished" scientists was appointed to oversee efforts at the wellhead. Known as the "DuBridge Panel," the commission had clear ties to the oil industry and Union Oil specifically, especially through the chair of the panel Dr. DuBridge. As a former Cal Tech President, Dr. DuBridge not only accepted donations

from Union Oil on behalf of the university, but Union's president Fred Hartley was also a Cal Tech trustee. Provided in a brief document lacking any substantive research, the solution proposed by the Panel was to drill up to fifty relief wells to suck the reservoir dry, a process that could take ten to twenty years. Furthermore, government officials were dependent on the oil industry for their data, and struggled to force Union Oil to release what it classified as "proprietary information" (1970:137).

The close relationship between science and the oil industry stood as a barrier to community members seeking to decipher the effects of the spill and decide how to respond. Dependent on grants from the oil industry, many university petroleum experts were hesitant to provide assistance to government officials for fear of losing their funding (1970:137). At the University of Santa Barbara where Molotch worked at the time, "...it is a fact that Oil interests did contact several Santa Barbara faculty members with offers of funds for studies of the ecological effects of the oil spill, with publication rights stipulated by Oil" (1970: 137). Moreover, while the local and national media provided reporting of particularly sensational aspects of the spill, there was little in depth coverage to adequately inform the public (1970:140).

Even in spite of scientific misconduct and insufficient media coverage that obscured the extent of the spill, the event nevertheless played a role in galvanizing public support for the environmental movement. Alongside the growing environmental movement, public pressure from the residents of Santa Barbara and played a role in mobilizing the support necessary to achieve these changes. Making the concern for the environment a national priority, President Nixon established the Environmental Protection Agency in 1970. Moreover, key pieces of environmental legislation were also put in place the same year including the National Environmental Protection Act, the Clean Water and Clean Air Acts and the Endangered Species Act. Furthermore,

after witnessing the environmental devastation caused by the Santa Barbara spill, Wisconsin Senator Gaylord Nelson proposed the creation of the first Earth Day on April 22, 1970. While the ongoing environmental movement as a whole achieved these changes, the Santa Barbara spill helped mobilize public support leading to significant milestones in federal environmental regulation.

Molotch (1970:144) concludes that, “The relationship described between Oil, government, and the knowledge industry does not constitute a unique pattern of power in America. All major sectors of the industrial economy lend themselves to the same kind of analysis as Oil in Santa Barbara.” In closing, Molotch stresses the importance of accident research at the local and national levels for revealing the arrangements of power in society and urges sociologists to be ready to spring into action when an accident occurs to investigate the underlying power arrangements, especially at the nexus of government and corporations.

Commemorating the fortieth anniversary of Earth Day, on April 22, 2010 nearly thirty-six hours after the initial explosion, the Deepwater Horizon buckled and sank into the Gulf of Mexico. With the collapse of the rig came the world’s largest offshore oil spill: the Macondo well was unleashed with full force. Over the course of the next five months, a massive response effort involving government officials in coordination with privately contracted oil spill response organizations fought to bring the well under control and contain the oil. Just like the 1969 Santa Barbara spill, the response to the 2010 Gulf of Mexico disaster provides an opportunity to gain insights about the structure of contemporary government and oil industry relations. Utilizing the concept of environmental state-corporate crime, this project will examine the causes of the Deepwater Horizon explosion and the response to the blowout of the Macondo well. A detailed analysis of the causes and consequences of the Gulf of

Mexico spill will provide a better understanding of the criminogenic state-corporate power relations that comprise the offshore oil industry.

Literature Review

The literatures on state-corporate crime and environmental crime share a number of commonalities. Debates surrounding the most appropriate definition of crime and criminality are a centerpiece of the research in both fields. Similarly, both fields trace their intellectual lineage back to Edwin Sutherland's concept of white collar crime. Despite their definitional and conceptual overlaps, past research on state-corporate crime and environmental crime has rarely explicitly brought the two together. An overview of the literature in both fields demonstrates just how compatible the two really are, and how absolutely necessary it is to combine the understandings of both bodies of research.

A definitional debate over what constitutes crime has persisted since Sutherland's introduction of white-collar crime and need not be fully reiterated in this project. Nonetheless, a brief review of the standards of harm to be utilized is necessary. While some scholars argue that crime is that which is prohibited by the criminal law (Tappan 1947), Sutherland proposed expanding the definition to include socially injurious behavior such as violations of regulatory law. Just like most of the research on state and corporate crime, environmental crime research also follows in this trend by examining violations of environmental law in addition to criminal law. Since governments define what is criminal, the harmful actions of state actors are most often not defined as such under the law. Therefore, some scholars have further proposed expanding the definition of crime to be based on violations of human rights (Schwendinger and Schwendinger 1970). Within this vein, many state-corporate

crime scholars have approached criminality as a violation of human rights as enshrined by international law under the United Nation's Universal Declaration of Human Rights.

Offering an anarchist alternative to legalistic definitions of crime and justice, Tifft and Sullivan's (1980) approach to crime highlights the significant social harms that flow from state and legal structures. The study of social harm, they argue, cannot be constrained by legal institutions but instead must be built on a needs-based approach to justice. Along these same lines, Hillyard et al. (2004) have worked to develop a theory of social harms (also known as "zemiology") that encompasses physical and financial harms, including those caused by states and corporations. Based on an anarchist perspective, the proceeding inquiry is not limited to legal definitions of crime but rather embraces a social harms approach which includes social, physical, and financial harm to humans. Going beyond anthropocentric definitions of harm, damage to the environment will also be evaluated with equal significance in this analysis. The interconnectedness between human and ecological harm can no longer be seen as separate and distinct, but must be considered on par with one another.

Definitional Debate

The concept of state-corporate crime developed as part of the broader study of white-collar crime. First introduced by Edwin Sutherland in 1939, the concept of white-collar crime was not more fully developed until the release of *White Collar Crime* (1949). According to Sutherland (1983:7), white collar crime is "...a crime committed by a person of respectability and high social status in the course of his occupation." A marked departure from the street crimes being studied by other criminologists of the time, Sutherland's definition incorporated the requisites of both high social status and an occupation setting. Clarifying his intentions, he states that

the term applies “principally to business managers and executives, in the sense that it was used by a president of General Motors who wrote ‘An Autobiography of a White Collar Worker’” (1983:265). In this context, the significance of high socioeconomic status is made clear in Sutherland’s conceptualization of white collar criminality.

Breaking rank with mainstream criminology, Sutherland’s concept of white collar crime challenged the legalistic assumptions of criminology. Due to their high status, Sutherland made clear, white collar criminals were often able to circumvent the penalties and social stigmas experienced by offenders with lesser social status. In order to bring the illegal, though not necessarily criminal, acts of high status offenders into the realms of criminological inquiry, Sutherland proposed a definition of crime emphasizing socially injurious behavior. Defining socially harmful violations of civil law as criminal was Sutherland’s attempt to direct criminological inquiry towards the crimes of the wealthy and powerful. Even though it marked a definitive shift in criminology, Sutherland’s concept of white collar crime was hardly out of bounds with many of the criminological and legalistic definitions of crime which granted the state the power to define socially injurious behavior (Schwendinger and Schwendinger 1970:126).

Not all criminologists, however, have viewed Sutherland’s conceptualization with such clarity. To the contrary, “The definition of white-collar crime...has always represented something of an intellectual nightmare” (Geis 1977:25). From Sutherland’s definition, two divergent threads of white collar crime research have emerged: occupational crime and organizational crime. The study of occupational crimes developed to examine crimes committed by individuals during the course of their occupation for personal gain. On the other hand, the study of organizational crimes interpreted Sutherland’s definition to be primarily concerned with the high

social status of white collar offenders. It is within this latter lineage that corporate crime, state crime and state-corporate crime have developed.

Organizational framework

Arguing that white collar crime does not sufficiently deal with the consequences of organizational behavior, Schrager and Short (1978) attempt to develop a sociology of organizational crime. They contend that:

Organizational crimes are illegal acts of omission or commission of an individual or a group of individuals in a legitimate formal organization in accordance with the operative goals of the organization, which have a serious physical or economic impact on employees, consumers or the general public. (1978:411-2)

Although individuals occupy organizational positions, their thoughts, actions and behaviors are fundamentally shaped by the goals, procedures, standards and norms of an organization. Moreover, the structure of any organization is composed of positions occupied by replaceable people, designed to ensure its longevity. Directing inquiry towards the goals, procedures, standards and norms of organizations draws attention to the power and influence of organizations in society and helps to further the understanding of the socially injurious behaviors which result from such structures. Applying an organizational perspective to the concept of white collar crime turned the subfield away from narrowly focusing on the role of the individual and reoriented it towards the power of organizational structures.

Corporate crime

In contrast to occupational crimes, research on corporate crimes has maintained Sutherland's focus on crimes committed by people of high social status as are found in the top positions of businesses. "An influential definition of corporate crime, by Marshall Clinard and Richard Quinney (1973:188), characterized [corporate crime] as 'offenses committed by corporate officials for their corporation and the

offenses of the corporation itself” (as quoted in Friedrichs 2007:55). Touching on a recurring theme within white collar crime research, this definition alludes to a tension between organizational actors and the individuals occupying the positions within the organization.

State crime

In his 1988 presidential address to the American Society of Criminology, Chambliss (1989) highlighted the necessity of studying crimes committed by the government through the concept of state-organized crime. He argues that, “the most important type of criminality organized by the state consists of acts defined by law as criminal and committed by state officials in the pursuit of their job as representatives of the state” (1989:184). Like many of the white collar crimes examined by Sutherland, state-organized crimes are rooted in the need for capital accumulation by modern nation states. In his definition of state-organized crimes, Chambliss (1989:184) notes that:

Examples include a state’s complicity in piracy, smuggling, assassinations, criminal conspiracies, acting as an accessory before or after the fact, and violating laws that limit their activities. In the latter category would be included the use of illegal methods of spying on citizens, diverting funds in ways prohibited by law (e.g., illegal campaign contributions, selling arms to countries prohibited by law, and supporting terrorist activities).

Relying on an organizational approach to crime, Chambliss redirects Sutherland’s concept by drawing attention to the crimes committed by state administrators while in the course of their occupation.

Attempting to create a definition of state crime inclusive of human rights, Green and Ward (2000) argue that the term “state crime” should refer to a convergence between both violations of human rights and state organizational deviance. Along the same lines as Schwendinger and Schwendinger (1970), Green

and Ward adopt a definition of human rights as articulated by the Universal Declaration of Human Rights. They assume human rights to be "...the elements of freedom and well-being that human beings need to exert and develop their capacities for purposive action" (2000:110).

Maintaining a more traditional approach to defining crime, Green and Ward (2000) include state organizational deviance in their definition of state crime. By defining state crime in such a manner, the authors are able to incorporate a definition focused on human rights while also retaining the concept of deviance so fundamental to traditional definitions of crime. State organizational deviance draws a distinction between acts committed by individual state actors and organizational misconduct. Green and Ward (2000:110) clarify that:

State organizational deviance is conduct by persons working for state agencies, in pursuit of organizational goals, that if it were to become known to some social audience would expose individuals or agencies concerned to a sufficiently serious risk of formal or informal censure and sanctions to affect their conduct significantly (for example, by inducing them to conceal or lie about their activities).

State organizational deviance may take the form of seemingly legitimate state operations and organizations which become entangled with illegal ones.

State-Corporate Crime

The concept of state-corporate crime will be the primary conceptual focus of this project, therefore warranting an extended literature review. Developed by Kramer and Michalowski, state-corporate crime directed attention towards the frequency with which both state and corporate actors come together in the production of social harm. As Michalowski and Kramer (2006:20) define the concept:

State-corporate crimes are illegal or socially injurious actions that result from a mutually reinforcing interaction between (1) policies and/or practices in pursuit of goals of one or more institutions of political

governance and (2) policies and/or practices in pursuit of the goals of one or more institutions of economic production and distribution.

This definition of state-corporate crime encompasses both legal criteria as well socially injurious actions while centering on the nexus between government and business.

Further refining the concept, Michalowski and Kramer (2006) distinguish between state-initiated and state-facilitated corporate crime and stress the importance of closely examining the interrelationships between state and corporate actors. They argue:

State-initiated corporate crime occurs when corporations employed by a government engage in organizational deviance at the direction of, or with the tacit approval of, that government. State-facilitated corporate crime occurs when government institutions of social control are guilty of clear failure to create regulatory institutions capable of restraining deviant business activities, either because of direct collusion between business and government or because they adhere to shared goals whose attainment would be hampered by aggressive regulation. (2006:21)

Stressing the importance of a historical, relational understanding of organizational actors, one crucial characteristic of the concept of state-corporate crime is that it “...directs attention toward the way in which deviant organizational outcomes are not discrete acts, but rather the outcome of relationships between different social institutions” (Michalowski and Kramer 2006:21).

Initially, four case studies (Kramer 1992; Kauzlarich and Kramer 1993; Aulette and Michalowski 1993; Matthews and Kauzlarich 2000) established the foundation for understanding state-initiated corporate crime and state-facilitated corporate crime. Illustrating the former, the case studies of the Challenger explosion (Kramer 1992) and the US production of nuclear weapons (Kauzlarich and Kramer 1993) both draw attention to the explicit role of the state in initiating deviant interorganizational actions. Alternatively, state-facilitated corporate crime occurs when government institutions of social control fail to restrain deviant business actions, either due to

direct collusion between corporations and government or because they adhere to common goals that would be thwarted by forceful regulation. Both the investigation of the fire at the Imperial Food Products chicken processing plant (Aulette and Michalowski 1993) and the crash of ValuJet 592 (Matthews and Kauzlarich 2000) highlight the failure of the state to effectively constrain corporate criminality.

The original development of the concept of state-corporate crime stems from a case study by Kramer (1992) of the deviant state and corporate intersections that resulted in the 1986 Challenger space shuttle explosion that killed seven crew members. Investigations revealed that rather than being the result of mechanical failure, the Challenger disaster resulted from a series of organizational decisions made by the National Aeronautics and Space Agency, a state agency, and Morton Thiokol, a private corporation who was contracted to build the faulty solid rocket boosters. This seeming “accident” can be viewed as a state-corporate crime since the cause of the disaster can be traced to the decisions and actions of NASA and Morton Thiokol (Kramer 1992).

Diane Vaughan’s (1996) work *The Challenger Launch Decision: Risky Technology, Culture and Deviance and NASA* documented how budgetary compromises and political pressure to launch led to the disaster. Vaughan (1996) identified what she termed as the “normalization” of deviant practices within the organizational culture at NASA that contributed to the catastrophic explosion. The normalization of deviance occurs when actors in organizational settings come to define deviant actions as normal since they conform to the norms and standards of the organization in which they act. As Vaughan (2007:11) explains, “Thus, in some social settings deviance becomes normal and acceptable: it is not a calculated decision where the costs and benefits of doing wrong are weighed because the definitions of what is

deviant and what is normative have been redefined within that setting.”

Also focusing on the historical, political and contextual factors contributing to deviant state and corporate interactions is Kauzlarich and Kramer’s (1993) study of the environmental damage caused by the US nuclear weapons manufacturing industry. For more than 50 years, the Department of Energy (DOE) and the Atomic Energy Commission contracted with private multinational corporations such as Westinghouse, DuPont, General Electric and Martin Marietta to produce nuclear weapons. While DOE owned the equipment and oversaw the production of nuclear weapons and materials around the country, the corporations were responsible for daily manufacturing operations. Producing nuclear weapons results in enormous amounts of radioactive and nonradioactive hazardous waste. This waste was improperly disposed of causing irreversible environmental damage. For example, two of the most environmentally harmful nuclear weapons facilities, the Hanford facility and the Savannah River plant which both produce plutonium and tritium, have released billions of gallons of liquid waste contaminating the local air, soil, groundwater, rivers and watersheds. Encouraged by Cold War cultural beliefs and lacking interorganizational oversight, the nuclear weapons industry placed production of defense materials above the environmental consequences of warhead production (Kauzlarich and Kramer 1993).

Another foundational case study of state-corporate crime by Aulette and Michalowski (1993) details the 1991 fire at the Imperial Food Products chicken processing plant in Hamlet, North Carolina that resulted in the deaths of twenty-five workers and injured an additional fifty-six. Although the technical cause of the fire was a rupture in the hydraulic line near the deep fryer that sent a wave of fire throughout the plant, it was discovered that Imperial had deliberately locked the fire doors to

prevent employee theft, thereby denying them access to a safe exit. Beyond the actions of Imperial, a complex pattern of regulatory failure was revealed. Facilitated by a long history of privileging business interests over labor, North Carolina's neglect to fund the state's Occupational Safety and Health Program severely weakened regulatory oversight designed to protect workers. In contrast to the examinations of the Challenger explosion and the US manufacturing of nuclear weapons that demonstrate the direct role of the state in the commission of corporate wrongdoing, the Hamlet fire study identified a different type of relationship in which the state indirectly creates the conditions for corporate crime to occur (Aulette and Michalowski 1993).

Matthews and Kauzlarich's (2000) examination of the crash of ValuJet Flight 592 in the Florida Everglades on May 11, 1996 helps to further define the role of the state in facilitating corporate crime. While the explicit cause of the crash that killed all 105 passengers and five crewmembers was the explosion of oxygen generators in a cargo compartment that resulted in fire, government investigations also identified the failure of both ValuJet and SabreTech (an airline maintenance company) to comply with numerous regulations as important factors. Dually tasked with the conflicting mandates of regulating the safety of the airline industry while simultaneously promoting it, the Federal Aviation Administration (FAA) refused to implement safeguards and guidelines that could have protected passengers in favor of the economic interests of the airline industry. By ignoring two specific recommendations by the National Transportation Safety Board (NTSB) to place smoke detectors in cargo holds (the exact area the fire started in ValuJet 592), as well as to reclassify cargo holds to prevent the spreading of fire to the rest of the plane, the FAA indirectly set the stage for the crash to occur (Matthews and Kauzlarich 2000).

Recent research on state-corporate crime

In addition to these early case studies, more recent research on state-corporate crime has emerged that examines international issues. A number of criminologists have paid increasing attention to the changing nature of state power in the global neoliberal economy and have begun to focus on the international arena. One theme among numerous recent case studies of state-corporate crime concerns the organizational deviance that has occurred due to the US invasion of Iraq. Kramer and Michalowski (2005) argue that the 2003 invasion and occupation of Iraq were illegal under international law and can therefore be classified as an instance of state crime. Despite multiple attempts by the Bush administration to define their actions as justified, Kramer and Michalowski (2005) demonstrate how the decision to go to war in Iraq was undertaken in clear violation of international law and paved the way for continued state-corporate crimes as a result. Similarly, Whyte (2007) explores how the overarching principle behind the US invasion and occupation of Iraq was the creation of a new rule of law based on the opening up of the economy to privatization by Western, and particularly US, corporations in breach of international law.

A second prominent theme is the relationship between private military firms and governments and the implications for state-corporate deviance. In the course of the occupation and invasion of Iraq, privatized security has been deployed on a scale never before seen. Rather than abdicating its authority to private military firms (PMFs), Welch (2009) contends that governments work in direct cooperation with them, creating a situation of fragmented power. In one instance in May 2007, Blackwater employees opened fire on the streets of Baghdad twice in two days, including a standoff with Iraqi security forces. Labeled “Baghdad’s Bloody Sunday,” another incident occurred on September 16, 2005 when Blackwater guards shot and

killed between eight and twenty innocent civilians and wounded dozens of others in Nisour Square. A documented repeat offender, Blackwater has also been investigated for at least six other episodes of excessive force. Despite this pattern of criminality, the US government has not only neglected to prosecute Blackwater employees and other contractors, but has extended immunity from wrongdoing altogether with respect to the reconstruction of the Iraqi economy. In this manner, the uncoupling of police and government forces allows private contractors to escape accountability for war crimes and human right abuses (Welch 2009).

Part of a broader trend of privatizing military functions, private military companies (PMCs) have become a legitimate industry involved in a wide range of activities including protecting governmental and non-governmental organizations during humanitarian missions, in addition to protecting corporate interests such as the extraction of oil and mining. Whyte (2003) argues that the unfolding of the PMC market can be understood as transference of law from international prohibition treaties and national criminal law, to civil contracts as the principal means of legal regulation. Far from a reduction of state sovereignty in the era of neo-liberal globalization, private military markets are dependent on the consent and support of governments for their livelihood. Moreover, governments have also come to recognize the benefits to be gained by forging a state-corporate alliance in the private military market. By expanding the PMC market, the opportunity structure for state-corporate crime is increased as states and corporations are able to engage in high risk or politically sensitive conflicts while evading accountability for their actions. Absent any new criminal legal controls, state-corporate crime in the PMC market is only likely to accelerate (Whyte 2003).

Furthermore, Rothe (2006:216) has identified war profiteering in the form of overcharging by Halliburton in Iraq as a form of state-facilitated corporate crime due to the government's aggressive refusal to take regulatory action against the company. While many of Halliburton's actions can be and have been classified as corporate crimes, in the case of overcharging in Iraq, evidence of state-corporate criminality is present. Rothe (2006:218) explains, "As these examples show, Halliburton has a history of corporate criminality and questionable organizational practices. However, it is the recent intermingling of Halliburton and Vice President Cheney that makes its corporate practices a case of state-initiated and/or state-facilitated corporate crime."

Rothe and Ross (2010) analyze how anomie and social disorganization, resulting in a lack of regulation, are significant factors in explaining the criminal propensity of private military companies (PMCs). Private forces such as Bechtel, Blackwater, CACI International, DynCorp, Halliburton and subsidiary Kellogg, Brown, and Root, Logo Logistics, and Titan, provide a wide range of services including direct tactical military assistance, military consulting (strategic advisory and training), and logistic, intelligence and maintenance services to armed forces. Within each of these sectors, there are variations in the types of crimes committed including murder, fraud and war profiteering. PMCs are not held to the same rules of engagement as the military and have an unclear legal status that is undefined by international law. Lacking internal and external constraints at every level, PMCs operate in anomic conditions that cultivate criminogenic behavior in which they are free to engage in deviant behavior without consequence (Rothe and Ross 2010).

As an investigator for a 2002 Royal Commission examining fraud within the Dutch construction industry, Van Den Heuvel (2005) helped reveal that rather than an isolated incident of collusion, the entire sector had engaged in illegal practices

including fraud, undercutting the market, unjustified subsidies, monopolization resulting in higher prices, and bribery of politicians and public servants. At the core, the Commission identified the industry-wide pandemic to be due to multiple forms of collusion, or a secret agreement for a fraudulent purpose. The Commission concluded that these forms of collusion within the Dutch construction industry were so interconnected that they constituted a culture that placed contactors above the law and in control of authorities. Because of the pervasive collusion between contractors and authorities, Van Den Heuvel (2005) concludes that it is necessary to enact stricter rules governing state-corporate interorganizational relationships.

Environmental Crime

Just like the definitional debates over what constitutes crime within the literature on white-collar crime, there is widespread disagreement about how to define environmental crime as well. Most simply, environmental crime can be defined from a legalistic perspective as “any act that violates an environmental protection statute” (Clifford and Edwards 1998:26). However, many scholars of environmental crime argue that the field must move beyond legalistic definitions, be they criminal, civil or regulatory. In consideration of broader philosophical issues, crimes against the environment can alternatively be defined as “an act committed with the intent to harm or with a potential to cause harm to ecological and/or biological systems and for the purpose of securing business or personal advantage” (Clifford and Edwards 1998:26).

Whether labeled environmental, green (Lynch and Stretesky 2003; South 1998; Lynch 1990), or conservation (Gibbs et al. 2010) criminology, the number of scholars concerned with the intersection between environmental, human and social harm continues to grow. One related subfield of environmental crime is the study of environmental justice which has highlighted the connections between the location of

environmental hazards, race and ethnicity. On the whole, research on environmental justice indicates that minorities are more likely to be exposed to environmental risks and harms than whites. Within this perspective, Stretesky and Lynch (1999) develop the concept of corporate environmental violence. In contrast to the common perception of violence as one-on-one physical contact, Stretesky and Lynch (1999:168) state:

Consequently, we argue for a broader definition of violence. Overall, we believe that violence is an act that results from an unjust use of power that results in physical injury, disease or disability. When violence is defined in these terms, it may apply to a situation where one individual shoots and kills another or where an automobile manufacturer knowingly disregards safety concerns, resulting in the death of several dozen people.

In their analysis, corporate environmental violence, measured as chemical spills, was found to be positively correlated with race and ethnicity and contributes to institutionalized racism.

Influenced by the environmental movements of the 1980s, green criminology as envisioned by Lynch (1990) combines environmentalism, radicalism, and humanism. Among other topics, green criminology includes the study of crimes committed against humanity through environmental destruction, examinations of the successes and failures of governments and corporations to protect humans and animals from environmental hazards, or the study of specific governmental and corporate practices and social trends that destroy the environment and thereby threaten the survival of humans, plants and animals (Lynch 1990:2). Green criminology must forge new paths and expand the narrow boundaries of traditional criminology to consider environmental harm as a form of social injustice. It is necessary, Lynch (1990:3) argues, "...that the critical community expand its focus to deal with a wider variety of class related injustices that maintain an inequitable distribution of power while

destroying human life, generating hunger, uprooting and poisoning the environment of all classes, peoples and animals. “

Arguing in favor of an environmental consciousness in the discipline as a whole, South (1998) stresses the importance of developing a green “perspective” that draws on established and preexisting traditions within criminology. After surveying the wide array of research that falls under the banner of environmental crime, South (1998:220) observes:

Evidently, criminology and related disciplines have documented a wide range of examples of environmental damage inflicted by unregulated power, corporate misconduct, organized crime and governmental lack of care. My suggestion here is that the development of, and sensitization to, a *green perspective* in criminology could provide a *unifying theme* and *rallying point* for such disparate work and add power to its accumulation as a concrete identifiable field of work within criminology.

Building on South’s suggestion, more explicit connections must be drawn between the fields of environmental and state-corporate crime. It is imperative that a “greening” of the study of state-corporate crime take place.

Raising the question of whether or not thinking on environmental crime has done more harm than good, Halsey (1997:217) argues that it has inadvertently “...fostered a regulatory culture based *around the regulation of inherently anti-ecological activities.*” He goes on to note, “Of crucial importance here (from an eco-human rights perspective) is the fact that the *risk* (however small) of an ecological disaster occurring- the very thing that environmental statutes attempt to minimize- will be omnipresent simply due to the nature of the activity at hand” (Halsey 1997:219). Rather than question the implicitly destructive nature of (largely capitalist) economic activities such as oil extraction, refinement and production, regulations are developed that manage and thereby perpetuate an “acceptable” amount of environmental

exploitation. It is necessary to move beyond narrow, state defined criteria for environmental harm, as it is important to remember that "...the state itself can be shown to be the perpetrator of the greatest ecological destruction due to its refusal (or incapacity) to either sanction the most environmentally destructive activities or facilitate a move toward a society that does not have at its core the greatest possible exploitation and commodification of nature" (Halsey 1997:226).

Avoiding the tendency to urge for tougher penalties or better regulation is necessary for environmental criminology to develop a new approach that moves beyond legalistic and anthropocentric understandings of environmental harm. Halsey argues that this new approach must clearly define "1) what constitutes an environmental problem, 2) how a particular problem relates to the wider logic or machinations of the politico-economic system in which it occurs, and 3) which resources (criminal law, education, technology transfers) should be mobilized to overcome environmental problems" (1997:217). On the whole, while critical criminology has been successful in promoting a human rights based definition of social harm, it has failed to take seriously the notion of ecological harm.

To address the inadequacies of critical criminology generally and studies of environmental crime, Halsey (1997) furthers the work of the Schwendingers' (1970) by incorporating both human and non-human rights to form an "eco-human rights" approach to environmental crime. An eco-human rights approach "...requires that activities which pose an ongoing threat to the environment be judged as ultimately detrimental to the long-term well-being of human and nonhuman life" (1997:218). By proceeding in this manner, justifying the importance of non-human rights to the study of environmental crime can help to counterbalance the tendency towards advocating

regulation of activities which are fundamentally detrimental to humans and the environment alike.

State-Corporate Environmental Crime

Just as the fields of corporate crime and state crime progressed in a parallel fashion for so long without converging into the hybrid of state-corporate crime, the study of environmental crime has also traversed a similar path with the field of state-corporate crime without explicitly intersecting. Forced to deal with the injurious actions of organizational actors and entrenched in the same definitional debates about what constitutes crime, environmental crime finds itself in a comparable position to state-corporate crime within the discipline of criminology. Tracing its intellectual lineage back to Sutherland's concept of white-collar crime, environmental crime is often at once a corporate crime as well. Yet while the actions of state and governmental actors are often analyzed in the study of environmental crime, seldom are these actions identified as state or state-corporate crimes. Rothe (2009:24), for example, notes in passing that "Environmental crimes can also be classified as either a state/corporate crime or a crime of globalization."

More recently however, scholars in of both state-corporate crime and green criminology have begun to sow the common ground between them. Specifically, of increasing significance within the literatures are the state and corporate interactions contributing to the critical problem of global warming and climate change, largely perpetuated by the fossil fuel industry. Often in close cooperation with government, the central role of the oil industry in creating environmental damage has been increasingly documented by the research on state-corporate crime.

Cruciotti and Matthews (2006) verify the Exxon Valdez oil spill as a state facilitated corporate crime by documenting the decisions made by the Alyeska Pipeline

Service Company, the U.S. Coast Guard, the State of Alaska and the U.S. government that made the oil spill, and the environmental damage it caused, a likely outcome. In contrast to Charles Perrow's argument that accidents such as the Exxon Valdez are in many ways a "normal" part of living with high risk technologies they argue that it was the result of deliberate decisions. "This series of oversight and failures to reprimand wrongdoing created an environment that, when coupled with a strong corporate profit motive, was conducive to an accident such as the grounding of the *Valdez*" (2006:162). It does not appear, however, that lessons from the Exxon Valdez spill have been heeded by neither government nor industry. Cruciotti and Matthews (2006:169) warn that "In spite of new legislation, environmental harm, and the large fines levied against Exxon as a result of the *Exxon Valdez* oil spill, problems within the oil industry in general have continued, ranging from oil spills to refusal to obey rules and lax regulations." Problems with the enforcement of regulations, they argue, are to blame for the ineffectiveness of legislation. Absent any mechanisms for enforcement, rules and regulations have little capacity to restrain organizational actors.

In one of the few pieces of research that explicitly acknowledges both environmental and state-corporate crime, Smandych and Kueneman (2010) identify the Canadian-Alberta tar sands as a type of state-corporate environmental crime. They assert, "in our view, this definition of state-corporate crime is ideally suited to study acts of commission and omission carried out by various levels of government in collusion with energy corporations in the Alberta tar sands that are responsible for causing a range of different types of harm to the ecosystem and animals, including humans" (2010: 97).

One of the greatest social forces contributing to the pressure to produce consumable oil from tar soaked sand in Alberta is coming from the US. However,

while the profitability of the tar sands was no secret for years before hand, there was not an aggressive state-corporate push for the development of the tar sands until the 1990s. The authors argue "...that since the late 1980s Canada has in effect surrendered sovereignty over its energy resources to the USA" (2010:88). Two key trade agreements including the Canada-USA Free Trade Agreement (FTA) and the North American Free Trade Agreement (NAFTA) obligate Canada to provide the US with what now accounts for 18 percent of total US oil imports (2010:93).

While US oil demands and the dominance of the "Big Oil" multinational corporations were of critical importance, Smandych and Kuenemund (2010) argue that the decisions of Canadian officials also played a significant role in allowing for widespread environmental degradation in the Alberta region to occur. They explain, "Specifically, we show that this disturbing state of affairs is the deliberate result of the efforts by the Conservative government of the Province of Alberta- and, more recently, the closely allied Conservative federal government of Canada- working hand-in-hand with the oil industry- that is, mainly US based multinational energy corporations" (2010:88).

Lynch, Burns and Stretesky (2011) have applied the concept of state-corporate crime to global warming by examining the politicization of global warming under the G.W. Bush administration. Although industry leaders are often selected for governmental positions, appointing corporate leaders from the oil and mining industries to crucial environmental policy positions was a dominant trend in the Bush administration that strengthened state-corporate ties and deterred action on climate change. Despite the overwhelming consensus of climate change scientists, the Bush administration colluded with corporations in the fossil fuel industries in an effort to discredit and suppress science on the human causes of global warming. White House

officials deliberately sought to undermine science on global warming in a number of ways including blocking publications, editing government reports, altering federal policy and pressuring climate change scientists to delete references to global warming and climate change in government sponsored research. Furthermore, the corporate strategy for undermining information on global warming was to fund and create front organizations to disseminate misinformation about climate change to the public. In this manner, the policies of the Bush administration privileged the interests of the fossil fuel industry over the interests of the public (Lynch, Burns and Stretesky 2011).

Four forms of state-corporate crime shape the social and environmental harms caused by global warming. Kramer and Michalowski (2012) argue that state and corporate actors produce these harms by: 1) denying that global warming is caused by the actions of humans (anthropogenic), 2) thwarting attempts to reduce greenhouse emissions, 3) excluding from the political arena ecologically just adaptations to climate change, and 4) responding to the social conflicts that arise as a result of climate change with militarism and violence. While anthropogenic global warming is the result of over two hundred years of industrialization and fossil fuel consumption, it is possible to identify state-corporate relationships that caused knowable and predictable harm and that could have been avoided. Therefore, the failure of state institutions to mitigate or reduce carbon emissions in the private and public sectors should be understood as a state-corporate crime of omission. More than just a failure to act, however, the orchestrated denial of climate change despite overwhelming scientific evidence to the contrary, constitutes a state-corporate crime of commission. Designed to cast doubt on the evidence for anthropogenic global warming, the global warming denial counter-movement has been directed, organized and funded by corporations and conservative think tanks. States and corporations have also refused to seriously consider socially

just adaptation policies despite the increasing number of social conflicts resulting from climate change. This too, Kramer and Michalowski (2012) argue, constitutes a state-corporate crime of omission.

Theoretical Approach

State-corporate crime has three useful characteristics as a sensitizing concept. First, it refutes the notion that organizational deviance is a discreet act by illuminating the relationships between social institutions. Second, by embracing the relational character of the state, the concept of state-corporate crime demonstrates how the horizontal interactions between political and economic institutions contain the potential for illegal and social injurious actions to occur (Wonders and Solop 1993). Finally, adopting a relational approach to the state not only allows for a consideration of horizontal interactions, but also the vertical relationships between different levels of organizational action: political-economic, organizational and interactional.

A major ontological assumption underpinning the study of state-corporate crime is “that state and corporate organizations are real actors that can be understood as connected to, but analytically distinct from, individual employees, owners, and regulators” (Kauzlarich and Matthews 2006:243). These organizational actors are the focus of this study and a strategy of “theoretical elaboration” will inform the analysis. Rather than allowing one particular theoretical perspective to guide social research, Vaughan (2007:3) argues in favor of theory elaboration which she describes as:

...inductive strategies for more fully developing existing theories that explain particular research findings by merging different theoretical perspectives in a more general way. More specifically, the means to theory elaboration are theoretical tools in general (theory, models, and concepts) rather than a more restricted formal meaning (a set of interrelated propositions that are testable and explain some phenomenon). The data define which theory (theories) or concepts would apply.

She notes that two strategies towards theory elaboration have occurred in criminology, one which brings together theories of the same level of analysis and another which attempts to unite theories from different levels. The most crucial consideration in merging different levels is the meso level, Vaughan argues, at which formal and complex organizations can be found.

In line with Vaughan's call for theory elaboration that unites the macro, meso and micro levels of analysis, Michalowski and Kramer's (2006) (see also Kramer and Michalowski 1990) Integrated Theoretical Model of State-Corporate Crime devises an analytic scheme for understanding organizational deviance. The framework is useful in bringing together different levels of analysis including the interactional, organizational and institutional levels based on three corresponding theoretical perspectives; differential association theory, organizational theory and political economy.

The interactional level draws on social learning theories generally and Sutherland's differential association theory specifically. Basing his theory on nine principles, Sutherland asserted that criminal behavior is learned in interpersonal interaction with others and that delinquency results from an excess of definitions that favor non-law abiding behavior (Sutherland and Cressey 1978:81-2). It is through these processes that an individual learns definitions that are favorable to criminal behavior. The organizational level incorporates the perspectives of organizational sociology. The work of Schragger and Short (1978) and Ermann and Lundmann (1982) directs inquiry towards the goals, procedures, standards and norms of organizations, draws attention to the power and influence of organizations in society, and helps to further the understanding of the socially injurious behaviors which result from such structures. Finally, the institutional level brings together the inseparable

relationship between politics and the economy; the intersection of state and corporate wrongdoing.

As Kramer (2010:120) explains “This model views the organization as the key unit of analysis, nested within an institutional and cultural environment, and engaged in social action through the decisions of individual actors who occupied key positions within the structure of the organization.” These three levels of analysis are linked to three catalysts for action including motivation or performance emphases, opportunity structure, and the operationality of control. The first catalyst for action (motivation) concerns goal attainment. As the emphasis on goal attainment by political-economic institutions, organizations and individuals increases, corporations and state agencies become more susceptible to engaging in organizational deviance. The second catalyst for action (opportunity) assumes that organizational deviance is more likely where legitimate means are scarce relative to goals. Finally, the third catalyst for action (operationality of control) examines the presence or absence of social control at all three levels of analysis. Organizations subjected to a high operationality of social controls are more likely to cultivate organizational cultures that favor compliance with laws and regulations and those organizations that are not subject to such controls are more likely to develop cultures of resistance. Michalowski and Kramer (2006:24) assert that, “This framework is designed to indicate the key factors that will contribute to or restrain organizational deviance at each intersection of a catalyst for action and a level of analysis.” By investigating the linkages between levels of analysis and catalysts for action a more nuanced understanding of state-corporate crime can potentially be developed.

Kauzlarich and Matthews (2006:242) explain the benefit provided by incorporating multiple theoretical and analytic levels into one frame work:

One of the advantages of theoretical integration is that several levels of social reality can be included in one analysis. Most conventional theories of traditional and white-collar crime tend to privilege one level of analysis over others. With integrated theoretical models, however, an attempt is made to “cover all the bases” in order to highlight the multiple connections between individuals, organizations, structures, and processes vital to the genesis and persistence of high level deviance.

Taking stock of the field of state-corporate crime, Kauzlarich and Matthews (2006:242) note that many of the empirical studies of the topic have tended to focus on the organizational and institutional levels of analysis while neglecting to focus on the interactional level. This is in part due to the difficulties in gaining access to people in positions of power and their ability to deflect public scrutiny and criticism of their actions. “Still, it is important that criminologists such as those working in the area of state-corporate crime to give priority to the structural level of analysis because by definition the phenomenon cannot be understood if it is divorced from macrolevel structures” (2006:243).

While the interactional level of analysis is no doubt of great significance to understanding state-corporate criminality, the real strength of the theoretical model, and what sets it apart from mainstream explanations of crime, is its attention to the influence of structural and organizational forces that result in social harm. Providing an example of how environmental crime can be perpetrated by the state, Kauzlarich and Kramer (1998) applied the integrated theoretical model to nuclear production and the waste it creates. Furthermore, Rothe and Mullins (2009) have stressed the importance of international relationships by developing the international level of analysis as separate from the institutional level. Drawing on the strengths of both of these applications of the integrated theoretical model, this project proposes to further incorporate the studies of green criminology and state-corporate crime while also

delineating a separate level of analysis at the level of industry, which can assist in highlighting the intersection between human and environmental harm.

Industry as a Level of Analysis

Located somewhere between the institutional and organizational levels of the integrated theoretical model, this dissertation argues that an industry constitutes an important level of analysis to be studied in its own right. As Aldrich (1979:185) notes: “Ideally, an ‘industry’ should be defined as all those firms within the same niche which are competing for the same resources, meaning that customers or clients treat their products as interchangeable or as equivalent substitutes.” Any conceptualization of an industry, however, must draw attention to the role of the state in shaping the environment in which the corporate organizations operate. Confirming the significance of the state in shaping the organizational environment, Aldrich (1979:164) stresses that, “Indeed, the state must surely be the *major* force affecting organizational formation in the twentieth century.” In many ways the laws and regulations created by the state function as a matrix that constrains and encourages certain interactions within and between organizational actors engaged in a common economic pursuit. The relations of state and corporate organizational actors within a given industry might provide an additional level of analysis that could lend further insight into organizational deviance.

Table 1: Integrated Theoretical Model of State Corporate Crime with Industrial Level of Analysis

<i>Catalysts for Action</i>			
<i>Levels of Analysis</i>	Motivation	Opportunity	Control
Institutional Level			
Industrial Level			
Organizational Level			
Interactional Level			

Within the fields of corporate crime, state crime and state-corporate crime, there have been relatively few systematic considerations of the deviant, harmful or injurious actions that result from the interactions of a particular industry. Comparably, within the literature on environmental crime, harm as a result of industrial relations is more often considered, yet few studies have undertaken a systematic analysis of the environmental harm caused by an entire industry. On the whole, the few studies of industry structures that have been conducted occurred during the 1970s, looked largely at economic crimes and lacked an organizational perspective (Leonard and Weber 1970; Farberman 1975; Geis 1977; Denzin 1977). Clinard and Yeager (2006), however, have explored industry as a unit of analysis by researching the ethical and unlawful problems caused by the oil, auto and pharmaceutical industries.

Leonard and Weber (1970:408) argue that in order to understand occupational crime, it is necessary to examine the market forces within different industries. They argue that “Insufficient attention has been focused by sociologists on the extent to which market structure- that is, the economic power available to certain corporations in concentrated industries- may generate criminal conduct.” This approach to occupational crime sees “criminogenic market structures” as a direct result of the legally established market structure. From their perspective, practices which do not abide by the laws of free market enterprise unencumbered by government regulation are criminogenic within the context of the capitalist market. In this regard, the consideration of social harm at the hands of industry is limited to strictly (capitalist) economic terms. Concerning occupational crime within the automobile industry, Leonard and Weber (1970:422) concluded that, “In sum, the frequent unethical actions of dealers and mechanics in furnishing repair service to the public must largely be regarded as coerced occupational crime resulting from a market structure in the

automotive industry which provides the auto-maker with potential, and applied, criminogenic power.”

Also looking into the automobile industry, Farberman (1975) examined how illegal behavior at lower levels of the industry resulted from organizational pressures at the top. Specifically, Farberman looked at how automobile manufacturers created a criminogenic market structure by imposing new car dealers with service warranties that resulted in the pressure to undertake illegal actions such as fraudulent service operations and kickbacks. The term “criminogenic market structure,” Farberman (1975:438) explains, “...means the deliberate and lawful enactment of policies by those who manage economically concentrated and vertically integrated corporations and/or industries which coerce lower level (dependent) participants into unlawful acts.” In this regard, attention is drawn to the structure of the economic market within an industry that generates pressures for actors at each level to engage in unlawful behavior.

Taking the heavy electrical equipment industry as his object of analysis, Geis’ (1977) analyzed the 1961 antitrust violation trials of heavy electrical equipment corporations such as Westinghouse and General Electric. In total, the trial involved the criminal prosecution of 29 companies and 45 individuals. Almost all of the corporate defendants plead guilty, while officials entered pleas of no contest which resulted in both fines and jail time. Involving multiple organizational actors engaged in a common economic activity, the price fixing conspiracy spread across the heavy electrical equipment industry. One significant finding was the “willful and blatant nature” of these offenses. Geis (1977:118-119) argues that “These were not complex acts only doubtfully in violation of a highly complex statute. They were flagrant, criminal offenses, patently in contradiction to the letter and the spirit of the Sherman

Anti-Trust Act of 1890, which forbade price-fixing arrangements as restraints upon free trade.”

Stressing a symbolic interactionist perspective, Denzin (1977) undertook a case study of the American liquor industry and the five tiers which comprise it; distillers, distributors, retailers, drinkers and the legal order. Organizations, he argues “...are best conceptualized as complex, shifting networks of social relationships” (1977:905). Denzin (1977:907) shares the assumptions of Hamilton et al (1938:3-4) who describe the imagery of an industry:

In a literal sense, there is no such thing as an industry.... Instead ... there is only a host of individuals . . . engaged in a varied assortment of personal activities-the digging of coal, the smelting of ore, the advancement of personal fortunes. . . . They are human beings who engage in human activities.... It is amid this babble of tongues, this confusion of purposes, this drama of divergent dramas that industry is to be found.... Yet industry is a name for what is at best a loose aggregate of business units engaged in performing a single service or producing a single commodity.... An industry is like an individual ... it has a character, a structure, a system of habits of its own. Its pattern is out of accord with a normative design; its activities conform very imperfectly with a charted course of industrial events.

Although this description of an industry captures the important relational dynamic of such a complex economic enterprise, it does not grant enough consideration to the highly organized character of these activities. Organizational actors within the context of an industry must be considered as a mediating factor between individual humans and an abstract economic marketplace.

Highlighting a crucial dimension of relations within an industry, Denzin (1977:906) notes the important role that power, coercion, control and deception can play. He argues that “Criminogenic activity evolves as a result of interaction among (as well as within) each of these tiers” (1977:906). Denzin (1977:918) draws many important conclusions about the criminogenic behavior of industry especially in terms

of the opportunities, means and motivations, such as:

The complaisant and taken-for-granted attitude, both within and without the industry, taken toward criminogenic activities suggests that below the articulated legal structure there exists an informal structure, one which often contradicts or supersedes the formal structure. The informal structure may define as “legal” activities which are defined as “illegal” by the formal structure. The taken-for-granted reality of the former legal order is, perhaps, more illusory than it is concrete.

Within the liquor industry, Denzin seemed to find that actions which were formally prohibited by law had informally come to be defined as appropriate and acceptable. Thus, in many ways the formal legal order was often less influential than the informal norms of the industry in regulating behavior. Anticipating Vaughan’s (1996) concept of the normalization of deviance within organizational cultures, Denzin notes that the informal criminogenic legal structure thus provided the opportunity for crimes within the liquor industry to become a normal part of industry operations.

Similarly, within all tiers of the liquor industry, Denzin observed that there was a collective nature and feelings of group solidarity that were conducive to normalizing and legitimating criminogenic activities. He explains that:

This produces a *callousness of attitude* which crosscuts all tiers and appears to be a factor in crimes of competition. The assumption that other participants have few scruples fosters the belief that survival in such an arena depends upon adoption of the same attitude. This belief becomes the *sine qua non* for the presence of criminogenic activity in any organizational complex. (1977:919).

Furthermore, within the liquor industry at all tiers, regulation depended on accurate self-reporting by the industry itself. Denzin (1977:918) concluded that a lack of regulation provided the means by which criminogenic activity was allowed to take place:

Scarcity of penalties and weak enforcement of laws often allow the industry to operate unmolested. *Structural ties between the political order and enforcement agencies* (such as those between local liquor

commissions and the police) belie separation of power between legislation and implementation. Such ties collapse into one unit-the liquor industry-the essential ingredients of power, control and corruption.

Here it appears that Denzin is describing a recurring issue within the state-corporate crime literature, state facilitation of criminal activity by creating a lax regulatory environment in which industry operates.

In closing, Denzin (1977:920) notes that his findings are likely not exclusive to the liquor industry and urges other scholars to examine whether similar criminogenic behavior is found throughout different industries:

Bribery, kickbacks, antitrust violations, payoffs and the circumvention of legal codes may or may not be specific to this industry. It awaits further case studies of an historical and observational nature to determine whether or not criminogenic conduct is basic to the survival, growth and success of American economic enterprises.

It is therefore the task of future researchers to provide historically grounded, empirical accounts of criminogenic conduct persisting within other American industries.

The oil industry

In their extensive research on corporate crime throughout the 1970s, Clinard and Yeager (2006) note that certain industries tend towards law violations more than others, specifically the oil, auto and pharmaceutical industries. From its inception, the oil industry was wrought with serious ethical problems. Clinard and Yeager (2006:237) cite, "Ethical issues in the oil industry involve the restriction of independent dealers, excessive profits, contrived shortages, pollution, misleading advertising, interlocking directorships, and inadequate research and development."

Despite the many attempts of the both politicians and the public to rein in the power of the oil industry, its defining characteristic continues to be the oligopolistic domination of the industry by a few massive corporations.

The oil industry has “often showed utter contempt for the environment” and has consistently opposed federal attempts to protect the environment (2006:250). Clinard and Yeager (2006:25) cite a report by the *Wall Street Journal* (March 17, 1978), which it is important to note refers to the oil industry as a social actor in its own right:

Angry oil industry officials plan to call on Interior Secretary Cecil Andrus today to complain that regulations issued recently by his agency could impede new offshore natural-gas production. The regulations, which have upset the industry, require the filing with the Interior Department of new, detailed plans and environmental reports before gas producers would be allowed to either explore for or develop gas reserves in offshore tracts leased from the federal government.

Legislation regulating the oil industry was often only implemented in response to serious environmental damage. In a situation startlingly similar to that of the BP Gulf of Mexico spill, in 1970 Chevron had been responsible for a runaway offshore well that leaked somewhere between 600 to 1,000 barrels of oil a day into the Gulf of Mexico for three weeks, creating a 52 square mile slick. Once considered a close ally of the oil industry, the Secretary of the Department of Interior Walter Hickel convened a grand jury to investigate the drilling practices of the fifty oil companies in the Gulf of Mexico and undertake the “strongest possible action” against the guilty parties. “A federal grand jury subsequently indicted Chevron on 900 separate criminal counts of ‘knowingly and willfully’ violating the law” (Hills 1971:196 as cited in Clinard and Yeager 2006:251). As a result of this spill and others, Congress passed the Water Control Improvement Act of 1970 which sought to regulate spill cleanups. “Thus, government regulation in this as in other areas has in large measure been a response to the inaction and irresponsibility of the oil companies” (Clinard and Yeager 2006:251).

What must come next are more case studies that observe the criminogenic behaviors of other industries to assess whether the findings of Clinard and Yeager

(2006), Denzin (1977) and others are unique or are widespread and thus symptomatic of a much more systemic problem. The significance of studying industry as level of analysis is critical to fully understanding both the human and environmental harm that can result from a complex web of state and corporate actors involved in a common economic pursuit. Seemingly more criminogenic than the others, the data presented by Clinard and Yeager (2006:251) "...show that of all industries, the oil industry had the most violations of federal laws and regulations, both in terms of total violations and in terms of pollution violations." Seen in this context, studying individual cases of oil spills will reveal little about the social and institutional forces which enable them to occur. Because of its persistent criminality, the nature and operation of the oil industry must be considered in addition to independent organizational actors.

Research Design and Methods

This project seeks to explore the government and industry relations that contributed to the explosion of the Deepwater Horizon rig as well as the state and corporate interactions throughout the response to the oil spill. In order to understand the current state of the offshore oil industry that led to the disaster, it is necessary to first undertake a historical review of the federal regulation and development of the industry since World War Two. By considering the financial incentives of offshore leasing and development for the federal government, a better understanding of the legislative actions and policies of successive administrations will come about. Moreover, providing a historical perspective on the relationship between the government and the offshore industry also helps to explain the changing nature of state and corporate relations that caused the event and structured the response to the spill.

In addition to the essential role of the federal government in developing the offshore oil industry, it is also important to evaluate the history and organization of the

corporations most directly involved in causing the disaster: BP, Transocean and Halliburton. An overview of the history of these corporations will provide a better understanding of changes to the organizational culture that may have contributed to the spill. Moreover, this will also help to substantiate the wide spread nature of offshore oil accidents and stress the importance of examining the spill from an industry wide perspective. Furthermore, it is also necessary to provide an account of the organizational decisions made by BP, Transocean, Halliburton and the Minerals Management Service that led to the technical causes of the explosion of the Deepwater Horizon and the blowout of Macondo.

Examining the state and corporate response to the spill will highlight the current power arrangements between the federal government and the offshore oil industry. Analyzing the response to the spill will also provide a better understanding of the structure of federal and corporate emergency response efforts, especially to environmental disasters, in the post-9/11 era. As environmental disasters are becoming increasingly likely due to climate change, the consequences of studying state and corporate emergency response efforts become all the more significant.

To explore these research questions this project proposes to undertake a case study approach. George and Bennett (2005:19-22) argue that the case study method has four particular strengths. First, case studies allow for a higher degree of conceptual validity since they allow the researcher "...to identify and measure the indicators that best represent the theoretical concepts the researcher intends to measure" (2005:19). Second, case studies also have the ability to examine deviant or outlier cases that can contribute to the development of new variables and hypotheses. Third, George and Bennet (2005:21) argue that "Case studies examine the operation of causal mechanisms in individual cases in detail." Finally, case studies also offer a

particular advantage in modeling and assessing complex causal relations. Each of these strengths of case study methodology makes it well suited to studying the complex social, political and economic forces that contributed to the Gulf of Mexico oil spill.

Vaughan (2007:17) contends that “Case studies of organizations are most useful because they can expose macro-level influences, micro-processes, and cultural influences external and internal to the organization.” The primary unit of analysis for this project is located at the organizational level. While the potential for studying industry as a level of analysis will be a constant focus of the inquiry, it is not within the scope of this project to undertake a wholesale examination of the oil industry. Rather, the aim is to consider what can be learned from BP’s Gulf of Mexico oil spill and other acts of environmental state-corporate crime about the nature and operation of the industry as a whole. It is the task of future research to embark on a systematic, in depth understanding of the criminogenic forces of the oil industry.

Since the primary unit of analysis is the organization, much of the data that will be used will be drawn from organizational actors, primarily government and corporate entities, in the form of documents and reports. Multiple sources of data will be used to understand the interorganizational relationships between government and the offshore industry that contributed to the spill and the response. In an attempt to avoid bias and to accurately represent the perspectives of the organizational actors involved, data sources from both corporate and state actors will be used. Further, the state and corporate perspectives will also be supplemented with journalistic and academic accounts. The blending or mixing of different kinds of data, known as “triangulation,” can help to ensure validity by providing evidence from multiple perspectives. Bringing together government, corporate, academic and journalistic sources on the causes of

the disaster and the response to the spill will provide a more reliable account. Moreover, using the Integrated Theoretical Model of State-Corporate Crime to direct the case study will provide a measure of external validity. In this way, findings that are congruent with other cases of state-corporate crime lend support that they are perhaps generalizable beyond the immediate incident.

Guided by the Integrated Theoretical Model, this analysis will focus primarily on the organizational level of analysis. However, the institutional level of analysis will also be brought to bear through historical, cultural and political-economic considerations at every stage of the project. Situated between the two, the importance of examining the industry as a level of analysis in itself will be supported. When possible, interactional level factors occurring within the organization will be incorporated as well. Furthermore, this account of the Gulf of Mexico spill will focus on the motivations of government and corporate actors, the opportunities for deviance to occur, and the presence or absence of social constraints. Above all, delineating the nexus of government and corporate interactions that led to the spill and shaped the response will be the overarching goal of this project.

Sources of Data

In order to better understand the state and corporate relations that contributed to the blowout and the response to the spill, secondary data analysis of publicly available documents will take place. Secondary documents including scholarly sources, government reports and documents, internal reports and documents from BP, and journalistic accounts will all be used to explore the Gulf of Mexico oil spill and past events. Furthermore, a concerted effort will be made throughout the project to provide internet links to every source of data possible. While this may be improbable in some cases (for instance privatized academic journals and books), in the era of the

internet nearly every source can be made publicly accessible with some additional searching and documentation on the part of the researcher. Taking efforts to provide internet links for data sources will further strengthen the reliability of the findings and conclusions since others are encouraged to go directly to the original source itself, at just the click of a link.

One primary source of data will be materials related to the presidentially appointed U.S. National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling's (aka the "National Commission") investigation into the spill, specifically their report titled *Deep Water: The Gulf Oil Disaster and the Future of Offshore Oil Drilling*. Other National Commission Staff reports will also be used to obtain more detailed information, including *The Amount and Fate of the Oil* and *The Use of Surface and Subsea Dispersants*. The dominant tone of the final report stresses the faults of the offshore industry without adequately scrutinizing the role of the federal government. These investigations will be considered the federal government's "official" account of the causes of the spill and the response and will be critically evaluated accordingly. More importantly, the references supporting the National Commission's final report will likely prove to be a treasure trove of data and information to draw on as well.

The U.S. Coast Guard also conducted extensive investigations into the agency's response to the incident. One report titled, *BP Deepwater Horizon Oil Spill Incident Specific Preparedness Review (ISPR)* will be used to provide understanding of the structure of the federal response and an analysis of the leading role played by the Coast Guard. Another report by the Coast Guard titled *Report of Investigation into the Circumstances Surrounding the Explosion, Fire, Sinking and Loss of Eleven Crew Members Aboard the Mobile Offshore Drilling Unit Deepwater Horizon in the*

Gulf of Mexico April 20-22, 2010, will also be evaluated concerning the immediate causes. Since the Coast Guard worked closely with both the Obama administration and BP in fighting the spill, these documents will give insight into the federal response from an operational perspective.

The National Oceanic and Atmospheric Administration published numerous reports on the calculation of the flow rate and the flow of the oil, as well as some of the environmental effects of the spill. For example, the *Oil Budget Calculator*, *Deepwater Horizon* will be considered in addition to the agency's report titled, *BP Deepwater Horizon Oil Budget: What Happened to the Oil?* Documents such as these produced by NOAA will detail how the flow rate from Macondo was calculated and what happened to the oil as a result of response efforts.

Numerous other government documents, reports and investigations will also be incorporated into the analysis. The findings of congressional investigations into BP's prior offenses at its Texas City refinery and at its Prudhoe Bay facilities will be drawn on. Also, government investigations into the 2008 Minerals Management scandal will be included. Emails and memos will additionally be used to provide evidence, particularly at the interactional level of analysis.

When they are publicly available, corporate documents, reports, and investigations surrounding the spill and prior accidents will also be considered. For example, BP's *Initial Exploration Plan, Mississippi Canyon Block 252, Regional Oil Spill Response Plan- Gulf of Mexico* as well as internal documents concerning the accident investigations into the Deepwater Horizon and prior disasters.

Industry wide studies by government, corporations and non-profit organizations such as environmental groups will also be used. For instance, Minerals Management Service commissioned studies concerning the state of blowout preventers

and causes of deepwater blowouts will be evaluated. This includes one report by the Norwegian company Det Norske Veritas titled *Forensic Examination of Deepwater Horizon Blowout Preventer*. Additionally, a report by the Center for American Progress titled *Big Oil Goes to College: An Analysis of 10 Research Collaboration Contracts Between leading Energy Companies and Major U.S. Universities* will be evaluated for an industry wide perspective.

Other reports from nonprofit and media organizations will also be integrated. One potential source of information, the Public Employees for Environmental Responsibility (PEER) is an organization that acts on behalf of government officials who blow the whistle on environmental wrongdoings, including scientific misconduct. Journalistic accounts from media organizations such as ProPublica, Mother Jones, the Nation, the New York Times, Reuters and Al Jazeera will be essential in providing critical accounts of the spill and the response beyond government and corporate perspectives. Similarly, books produced by scholars and journalists since the spill will also be considered. For example, Antonia Juhasz's (2011) *Black Tide: The Devastating Impact of the Gulf Oil Spill* and Tom Bergin's (2011) *Spills and Spin: The Inside Story of BP* will help to round out the analysis.

All of these sources will be weaved together to create a chronological narrative of the history of the federal regulation and development of the offshore oil industry, the causes of the explosion of the Deepwater Horizon rig, and the state-corporate response to the spill in the Gulf of Mexico.

CHAPTER TWO: FEDERAL REGULATION OF THE OFFSHORE OIL INDUSTRY

Peak Oil and Deepwater Drilling

Oil has been the quintessential resource fuelling the United States economy since World War II, surpassing coal as America's dominant energy source in 1950. Shortly thereafter, in 1956 a geologist working for Shell Oil named M. King Hubbert made a presentation before the American Petroleum Institute in which he predicted that U.S. oil production would peak in 1970. He further warned that the decline in output would occur at the same rate it had risen; rapidly. Known as "Hubbert's Peak," his assessment was initially ridiculed by the industry, but his forecast was ultimately proven accurate: U.S. oil production had indeed peaked by 1970. Moreover, in 1969 Hubbert further warned that global oil production would also peak by 2000. However, as the 1973 Organization of Petroleum Exporting Countries (OPEC) embargo dominated the U.S. political and industry agenda, the significance of Hubbert's predictions was dismissed. Additionally, Priest (2007a:1-2) contends that "... little effort has been made to assess the implications of Hubbert's accurate 1956 prediction in the late twentieth century. This evolution revolved around the efforts of U.S. oil firms to stave off the decline in domestic production through extensive exploration and technological innovation."

Coinciding with peak oil and declining global reserves has been the rapid growth of the offshore oil industry, particularly in the Gulf of Mexico. Sharing a mutually profitable stake in exploring and developing offshore lands and the natural resources they hold, policymakers and industry alike have viewed offshore oil drilling in the Gulf of Mexico as the solution to maintaining America's exponential oil

consumption. “Barring future major discoveries elsewhere in the United States, which seems unlikely, the Gulf of Mexico will have provided the most significant extensions to U.S. petroleum reserves in the post-WWII period” (Priest 2007a:2). But as Priest (2007b) argues, the business of the oil industry is the extraction, not the creation, of oil. Drilling in continuously deeper waters is only a symptom of a more fundamental problem: declining oil reserves.

The historical development of the Gulf should be characterized as an adaptation to decline, not a breakthrough to growth. As the Gulf of Mexico offshore industry matures, the limits on its potential become more apparent, even with the revival of activity in deepwater. The fact that industry must keep searching in ever deeper, more remote waters, with increasingly expensive and sophisticated technology implies growing scarcity, not abundance. (Priest 2007b: 260-261)

Offshore oil drilling must not be viewed as the solution to energy independence, but instead as a desperate attempt to maintain dependence on oil in the face of declining reserves. As the global oil supply begins to dry up, it becomes necessary to venture into more treacherous waters, relying on riskier technologies that put humans and ecosystems in harms way.

The traditional historical narrative of offshore oil development offered by industry champions the success of technological advances in conquering the deep waters of the Gulf. Yet it was not industry’s entrepreneurial ingenuity alone that led the voyage to the deep water’s horizon. Support from the federal government was absolutely essential throughout the offshore oil industry’s development. According to Priest (2007b:234):

In each of these eras, the technological and organizational development of the industry depended on some combination of government assistance, relaxed terms of access, and unique environmental conditions. The importance of these factors calls into question the storyline of market-driven technology and its miraculous ability to expand and create petroleum abundance in the Gulf.

Boué and Jones (2006:236) come to a similar conclusion stating that, "...the phenomenal success of the GOM deepwater would seem to owe far more to taxes (or more precisely, the absence thereof) than to technology." It is therefore important to not only examine the historical and political contexts in which federal offshore policies have been crafted, but also to critically assess the federal-industry motivations underlying offshore oil exploration in the post-WWII period.

Jurisdiction over the outer continental shelf (OCS) off the coastline of the U.S. has been a contentious issue between the federal and state governments following the Second World War. The general thrust of federal legislation has granted the national government far greater control over OCS resources while limiting the ability of coastal states to oversee offshore development. At the root of the conflict is the fact that coastal states suffer the consequences of offshore development but do not share in the benefits. Compared to the national government, coastal states disproportionately experience the ramifications of offshore exploration and development including the construction and operation of drilling rigs, platforms, pipelines, treatment facilities, refineries and pumping stations. Moreover, the secondary effects of such offshore development also strain local social services such as schools, hospitals, housing and police. Finally, the environmental effects of offshore oil drilling can have devastating consequences that are specific to regional communities and ecosystems. Water and air pollution, wetland destruction, as well as marine and ocean life disruption are costs that must be differentially experienced by coastal states (Fitzgerald 2001:154-5; See also Freudenberg and Gramling 1994:26-33). While differentially bearing these burdens, coastal states receive limited royalties from federal leases of offshore lands that lie beyond their boundaries.

Due to the risks and costs of offshore development experienced by coastal states, Miller (1984) argues that states have a more vested interest in environmental protection of the OCS than the federal government and therefore should be given a role in the OCS development process. Far more than the federal government, coastal states are better positioned to manage offshore development in an environmentally considerate manner. In spite of this, offshore oil exploitation has almost exclusively remained in the hands of the federal government with scarce regard for its effects on coastal communities and the environment. As Miller (1984:450) charges, “The federal government’s role as the proprietor of OCS revenues conflicts with its role as guardian of the public trust in coastal resources. Its incentives, reinforced by political considerations of massive federal budget deficits, tip toward rapid exploitation of OCS resources.” Indeed, the history of U.S. offshore leasing and development has demonstrated that the federal government, in coordination with the oil industry, has pillaged and profited from public OCS resources at the expense of coastal communities and the environment.

Establishing Federal Control: Early Offshore Oil Claims (1937-1954)

Foreshadowed by increasing demand for oil resulting from World War II and the Cold War, federal officials undertook an inventory of national resources which spotlighted the importance of offshore oil deposits, particularly to the Navy (Engler 1961:87). Leading the charge to stake claim on the oil, Harold L. Ickes Secretary of Interior under the Truman administration, set out to establish federal control over offshore land as early as 1937, first through Congress then through the Courts. As the dispute played out, the oil industry was concerned that their existing drilling operations contracted with state governments could be jeopardized by federal drilling or leasing.

Beginning with the earliest shallow water drilling attempts dating back to 1896,

coastal states had managed offshore development and leasing. Up until 1937, state ownership of the adjacent tidelands was “virtually unquestioned” and Congressional policy had been one of non-intervention (Miller 1984:405). Known as the “equal footing clause,” it was assumed that the original thirteen colonies became sovereign and independent entities and succeeded to the rights (including jurisdiction over the marginal sea) and title of the Crown at the time of the revolution. The debate over state control of the tidelands abruptly changed when President Truman asserted the federal government’s ownership of offshore lands in the 1945 Truman Proclamation, though agreeing to honor existing state leases. Nevertheless, California, Louisiana and Texas persisted in offshore leasing following WWII (Freudenberg and Gramling 1994:18).

Testing the federal claim to offshore lands, the Truman administration turned to the courts. Commonly referred to as the “Tidelands cases” (see also Bartley 1953), a series of Supreme Court decisions between 1947 and 1950 worked towards resolving the battle between federal and state governments (*United States v. California* (1947), *United States v. Texas* (1950), *United States v. Louisiana* (1950)). Despite prior court rulings from 1842 until 1935 that consistently granted coastal states jurisdiction over submerged lands, the Supreme Court’s decision privileged the federal government’s arguments of national sovereignty and defense, navigation and international affairs. Thus, the court ruled that the federal government had exclusive authority over the OCS. However, one crucial omission was made in the *United States v. California* (1947) case: oil. As Miller (2001:408) points out:

Conspicuous by its absence was any reference to oil. Given that a respectable argument can be made for national control of offshore oil production on the grounds that a steady supply of oil is necessary to ‘fuel the engines of war’ and provide for the national defense, that absence becomes more striking. A partial explanation lies in the understandable reluctance of the U.S. to draw attention the fact that it

was effectively attempting to expropriate very valuable resources from the states without compensating them.

Boué and Jones (2006:33) draw similar conclusions about federal interest and intent in controlling the oil and revenues contained in the OCS:

The US Federal government was aware that some very prolific fields might be discovered offshore the Gulf Coast... Thus, the Tidelands dispute was all about preventing the multi-layered national scheme for the control of production (centered on the Connally Hot Oil Act, the Interstate Oil Compact and the Railroad Commission of Texas) from being undermined by new flows whose magnitude could be expected to be much greater if the leasing process were in the hands of the revenue-hungry coastal states, as opposed to the steadier hands of the Federal government.

After the Supreme Court cases, federal interests in offshore oil development began to eclipse state control over coastal waters and the crucial resources that lay within them. In 1950, following the decisions the Department of Interior halted new offshore exploration but permitted the completion of drilling already in process. Offshore leasing and exploration would not be resumed for another three years as Congress and the presidential candidates debated the issue (Priest 2007:54).

The Submerged Lands Act and Outer Continental Shelf Lands Act of 1953

The Tidelands controversy became an important issue in the 1952 presidential campaign as Dwight Eisenhower campaigned on the promise to restore offshore rights to the states. Working towards this pledge, Congress passed two key pieces of legislation that attempted to settle the dispute: The Submerged Lands Act and the Outer Continental Shelf Act of 1953. This legislation set the limits of state jurisdiction to three miles off the coastline while establishing the domain of the federal government over the OCS. Of the coastal states, the compromise clearly benefited California the most, whose OCS is much narrower and lies within 20 miles of the shoreline compared

to the Gulf of Mexico region in which the OCS extends much further into deeper waters.

In response to the Supreme Court's decision in *U.S. v. California* Congress passed the Submerged Lands Act in 1953. The Submerged Lands Act quickly claimed for the Gulf coast states the title to offshore lands that fell within three miles of the shoreline. However, subsequent decisions ruled that both Texas and the west coast of Florida can lay claim to three marine miles (about 9 miles) based on their jurisdiction as sovereign nations prior to their admittance into the Union (Freudenberg and Gramling 1994:20).

The Outer Continental Shelf Lands Act (OCSLA) of 1953 established federal jurisdiction and control over the OCS extending outward beyond the states' three mile tidelands and furthermore stipulated a process for leasing. As Freudenberg and Gramling (1994:165) explain, "Federal revenue from OCS leases comes from two sources. A bonus bid is a sealed, theoretically competitive bid offered by a company, or group of companies, to secure the acreage. Royalties represent a percentage of the profit from the exploitation of any oil that is actually extracted." As authorized under the OCSLA, the Secretary of the Interior was charged with overseeing and administering the lease which was to be coordinated by the Bureau of Land Management (BLM) and the U.S. Geological Survey (USGS). Under this arrangement, the BLM was responsible for reviewing nominations for leases and overseeing competitive bids based on highest cash bonus bid with fixed royalty or percentage bid with fixed cash basis. After the sale, the USGS regulated OCS activities and collected royalties. Additionally, the coastal states had no role in the leasing process and did not receive any OCS revenues (Fitzgerald 2001:54). The

OCSLA remained the primary policy regarding offshore oil leasing and development until key amendments were made in 1978.

Federal Royalties from Outer Continental Shelf Leasing (1954-1969)

While the Outer Continental Shelf legislation was theoretically a national leasing program, sales differentially took place in the Gulf of Mexico region compared to other parts of the country like the Pacific Coast. “From 1954 through 1969, there were twenty-one OCS lease sales, generating approximately \$3.4 billion in bonuses alone, and the lease sales soon began to be realized as a major source of revenue for the federal government...but in reality, all of but four of those twenty-one sales took place in the Gulf of Mexico” (Freudenberg and Gramling 1994:21). Ever since the federal government began OCS leasing in the Gulf of Mexico in 1954, the region has continued to represent a significant source of financial revenue for the federal government. As Boué and Jones (2006:1) argue:

From a fiscal standpoint, upwards of 90 percent of all OCS mineral lease payments are generated in GOM, making petroleum activities in the region the second most important individual source of revenue for the US Federal government after general income taxation (admittedly, it is a distant second place). Even in years of low oil and gas prices, the revenues that the US Minerals Management Service (MMS) receives from oil and gas activities in GOM would place the agency squarely among the first 100 firms in *Industry Week's* survey of the 500 largest US manufacturing companies. Furthermore, the OCS offshore leasing programme constitutes by far the largest non-financial auction market in the world, in constant dollar terms.

OCS leasing in the Gulf of Mexico region is clearly a significant source of revenue for the federal government making it a persistently politically contentious issue. With such an enormous economic incentive, the federal government has been motivated to promote offshore oil exploration and development at the expense of environmental protection. Thus, the federal government often found itself working in close

coordination with the oil industry to help explore and exploit the country's OCS resources.

Industry Influence on Government

The oil industry exerted great influence over the DOI in the Gulf of Mexico region from the inception of the OCS federal leasing process. As Miller (1984:449-450) states:

The federal government and the Interior Department have been quite susceptible to oil industry influence. This is illustrated by the "closed process" of decision making which existed between the oil industry and the Secretary of the Interior from the time of the OCSLA's passage until its amendment in 1978, and by Secretary Watts proposed 'fire sale' of one billion acres of OCS resources at a time of falling prices and demand.

Furthermore, Fitzgerald (2001:54) also explains the revolving door between DOI and the offshore oil industry:

During this period [1954-1969] decisions regarding OCS development involved the petroleum industry and Interior officials, many of whom were recruited from the industry. The Bureau of Budget's (now Office of Management and Budget) need for revenues and industry interest determined when and where leasing would occur. Interior restricted OCS offerings to keep the demand for the leases high, insuring the receipt of maximum revenues. Interior's approach was 'minimum regulation and maximum cooperation.'

The federal incentive in offshore oil development is clear; it appears that the interests of industry trumped national ones. Mutually beneficial for both parties, the federal government in cooperation with the oil industry have profited from the OCS leasing process while neglecting its impacts on coastal communities and the environment.

In the early 1960s and 1970s, federal oversight of the offshore industry was best characterized by the philosophy of "minimum regulation, maximum cooperation." The USGS was understaffed and underfunded. In 1969, the USGS had only 12 people overseeing more than 1,500 wells in the Gulf of Mexico region. The few trained

supervisors and inspectors it did have lacked knowledge of the industry and its rapidly changing technology. As cited by the National Commission (2011:28), “In general, as a 1973 National Science Foundation study concluded, ‘the closeness of government and industry and the commonality of their objectives have worked against development of a system of strict accountability.’”

From the very beginning, the federal government’s authority to control how OCS resources are leased and developed has been “virtually without limitation.”

According to the National Commission (2011:67):

The root problem has instead been that political leaders within both the Executive Branch and Congress have failed to ensure that agency regulators have had the resources necessary to exercise that authority, including personnel and technical expertise, and, no less important, the political autonomy needed to overcome the powerful commercial interests that have opposed more stringent safety regulation.

Especially since the reorganization of the BLM and the USGS into the Minerals Management Service in 1982, government regulators became increasingly paralyzed in their efforts to oversee OCS development.

Environmental Protection vs. Energy Development (1969-1981)

The push for offshore oil was stalled as the environmental consequences of offshore development were soon brought to public attention. Not long after federal leasing was opened along the Pacific Coast in 1966 and 1968, Union Oil’s production well exploded on January 28, 1969 off the coast of Santa Barbara and continued to leak for months (Molotch 1970). Of less prominence, two other offshore explosions and spill occurred in the Gulf of Mexico not long after the Santa Barbara spill. In February 1970, a platform owned by Chevron exploded and caught fire resulting in pollution, damage to wildlife and postponed federal offshore leases. Shortly thereafter, a platform owned by Shell exploded and caught fire on December 1, 1970, killing five

people and injuring 37. Containing 21 different wells, the initial fire at one well quickly spread to ten within one week. The disaster lasted 155 days before the fire could be put out and the wells brought under control through a combination of controlled burning, collecting the oil and drilling relief wells (Priest 2007a:145-7).

The Santa Barbara spill, followed by the others, forced the government to implement stronger environmental policies. Moreover, national media coverage of these offshore spills gave sympathy to the concerns of environmental groups and raised public skepticism of OCS development. Not long after the spill and the national attention it received, the Nixon administration was pressured to enact environmental legislation including creating the National Environmental Protection Act as well as the Clean Air and Clean Water Acts. Furthermore, in response to the spills the USGS pushed for a redrafting of the American Petroleum Industry's "recommended practice" guidance documents for the selection, installation and testing of safety devices on offshore rigs (U.S. National Commission 2011:30). These events and the publicity they received had a significant, though temporary, effect on the development of offshore oil drilling.

Following the Santa Barbara oil spill in 1969, legislation was passed that began to focus on the environmental effects of offshore development. For example, the Coastal Zone Management Act (CZMA) of 1972 and the OCSLA Amendments in 1978 were initial legislative attempts to consider the environmental impacts of OCS energy development. Moreover, the CZMA also granted the states greater say in the development process and helped to voice environmental concerns. In contrast to the federally dominated OCS model of "geographic dual federalism," the CZMA attempted to create a model of "cooperative federalism" between the national and state governments which reasserted the rights of coastal states to protect, restore,

plan, manage and regulate coastal development. In exchange for federal grants, coastal states were required to develop a Coastal Zone Management Plan (CMP) which allowed for the state review of federal actions effecting land and water use in those areas. The CMP was to then be reviewed by the Office of Ocean and Coastal Resource Management (OCRM), National Oceanic and Atmospheric Administration (NOAA), within the Department of Commerce. Once the plan was approved its stipulations then become enforceable polices thereby giving states the power to object to any federal action which is in violation of the CMP (Wilder 1993).

Legislation such as the CZMA incorporated coastal states into the development process and began to move towards OCS management that was more protective of environmental resources than exclusive state or federal control over the OCS. However, in spite of the potential for greater environmental considerations in coastal development, the implementation of the CZMA has not been effective, especially in the wake of the 1973 OPEC oil crisis and the push for “energy independence.” Further hampering its progress, Kalen (2010:11080) notes that:

...historically, the coastal zone management (CZM) program has been slow to develop, with considerable reluctance by the DOI to apply the program to OCS energy development, and instead, the OCSLA and the National Environmental Policy Act (NEPA) dominate and eclipse most of the discussion about the OCS oil and gas program.

Consumed by recurring international oil crises throughout the 1970s and 1980s, the political discourse on OCS development continued to neglect environmental concerns in favor of economic ones. As a result, funding for the CZMA was subsequently terminated beginning with the Reagan administration in 1981.

Outercontinental Shelf Leasing Act Amendments

Throughout both the Nixon, Ford and Carter administrations, numerous lawsuits were brought by the public, environmental organizations and the petroleum

industry which challenged OCSLA both on the basis of environmental and national energy issues. Passed twenty-five years before environmental concerns graced the federal agenda, public litigation highlighted OCSLA's leasing processes failure to account for environmental effects. Fitzgerald (2001:64) explains that:

Many studies concluded that the OCSLA did not adequately address environmental protection or the national energy crisis. The studies recommended the establishment of an orderly long-term leasing schedule, greater federal-state cooperation, increased public participation in the process, the release to Interior of all industry data necessary for resource evaluation, strict enforcement of all OCS activities, and the utilization of the best available technology to prevent and clean up oil spills.

As OCS development accelerated, the leasing process stipulated in the 1953 OCSLA inadequately handled the changes and the need for amendments became evident. The 1978 OCSLA Amendments established the modern process for OCS leasing and expedited development. The OCSLA Amendments put forth a five year schedule for leasing and development of offshore lands and also mandates a review of the environmental impacts. As Kalen (2010:11080-11081) explains:

Congress also established a four-stage process for OCS oil and gas development: (1) the issuance of a five-year leasing program; (2) the issuance of specific lease sales; (3) the approval of exploration plans; and, lastly (4) the approval of development and production plans. The first phase is critical, because the issuance of leases, and any subsequent activities under any particular lease, can only occur if the lease or leases have been included in the relevant five-year leasing program. This five-year leasing program, moreover, triggers the preparation of an environmental impact statement (EIS), the first of several NEPA documents.

Furthermore, elements of the 1978 OCSLA Amendments work against environmental protection. For example, the law stipulates that the DOI must approve a lessee's exploration plan within 30 days, yet a detailed review to ensure environmental safeguards can take far longer (U.S. National Commission 2011:80). Mandating the

completion of an environmental impact studies for offshore development was a step in the right direction, but more emphasis was placed on streamlining the leasing process to expedite development rather than environmental considerations.

Under the 1978 OCSLA, Congress also failed to ensure rigorous environmental oversight in the Gulf of Mexico by exempting oil and gas development from requirements under NEPA. The U.S. National Commission (2011:80) states:

As a result of political compromise with oil and gas interests, the Act exempts lessees from submitting development and production plans (which include environmental safeguards) for [Department of Interior] agency approval. Accordingly, Gulf leases, unlike those applicable to other offshore areas, are not subject to the requirement of at least one NEPA environmental impact statement for development plans for a particular geographic area.

On its own initiative, in January 1981 the DOI went even further and categorically excluded all offshore exploration and drilling applications for the Central and Western Gulf of Mexico from NEPA review. In 1986 MMS would later revise its categorical exclusion to allow for NEPA review under very narrowly defined “extraordinary circumstances,” but agency personnel were reluctant to flag such applications (U.S. National Commission 2011:81-2). In the end, the goal of expediting the leasing process took precedence over the environmental concerns raised by the 1978 OCSLA amendments, a trend that would persist in the years to come.

Neoliberal Offshore Development: The Rise and Fall of the Minerals Management Service (1982-Present)

During the Reagan-Bush era, federal officials managing the OCS were aggressive supporters of new offshore development in an attempt to end the federal deficit and promote energy independence. This resulted in numerous policy changes that altered the course of offshore leasing. According to Lester (1991:251-3 as quoted in Wilder 1993:140):

Radical changes undertaken in the early 1980s should be recalled here. At that time, in order to push through new OCS development, the “Reagan administration began its deregulation effort by appointing [federal Office of Ocean and Coastal Resources Management] administrators clearly sympathetic to the administration’s position of offshore development... The ‘capture’ of OCRM by oil interests became evident almost immediately after Reagan’s election.

Furthermore, Reagan also appointed the controversial James Watt to head the Department of Interior. According to Priest (2007a:219), “Reagan’s Secretary of the Interior, James Watt, believed fervently in letting the market determine energy outcomes and releasing federal lands for exploration.” Upon his appointment, Watt set out to promote energy independence by dramatically expanding drilling in the OCS.

Within one year of his appointment, Watt had reorganized the functions previously executed by the BLM and the USGS into one agency, the Minerals Management Service (MMS). The combination of these two agencies into one created an inherent incentive to privilege promotion of the offshore industry over safety and environmental regulations. “When Interior Secretary Watt moved regulatory oversight of offshore energy exploration and production to a new entity that was also responsible for collecting revenue from the activity it regulated, he created a new agency that inexorably came to be dominated by its focus on maximizing that revenue” (U.S. National Commission 2011:76).

While the increased revenues generated by the new MMS benefitted both government and industry alike, they came at the expense of increased safety and environmental risks. As the National Commission (2011:56) asserts:

Revenue generation-enjoyed by industry and government- became the dominant objective. But there was a hidden price to be paid for those increased revenues. Any revenue increases dependent on moving drilling further offshore and into much deeper waters came with a corresponding increase in the safety and environmental risks of such

drilling. Those increased risks, however, were not matched by greater, more sophisticated regulatory oversight. Industry regularly and intensely resisted such oversight, and neither Congress nor any series of presidential administrations mustered the political support necessary to overcome that opposition.

Immediately after the creation of the MMS, in July 1982 Watt proposed a new five-year plan to lease nearly one billion acres of the OCS. This is in contrast to the 55 million acres offered in the prior June 1980 leasing plan. The alterations put in place by Watt had negative consequences, including a decrease in the amount of bonuses received per acre in addition to increasing opposition to the federal OCS program from states. Despite Watt's ambition, his proposed plan would never be fully realized after facing a barrage of court cases challenging its legality. Nonetheless, the newly formed MMS and Watt's promise to expand offshore drilling with scant regulation did succeed in the Gulf of Mexico (U.S. National Commission 2011:63).

Area-Wide Leasing

One of the most significant changes put in place by Secretary Watt at the newly established MMS was the practice of "area wide leasing" (AWL) which opened much larger sections of land at one time. Boué and Jones (2006:198) explain that:

This crystallized into an extraordinarily ambitious five-year leasing programme that hinged upon offering industry nothing less than the entire extension of the Federal OCS, by means of 41 lease sales. This programme, and the policies that gave form to it, came to be known under the uninspiring name of area wide leasing (AWL). This moniker was due to the fact that the cornerstone of the programme was to offer entire OCS planning areas at a time (each one up to 50 million acres in extension), in preference to the method used until that point, which consisted of only offering tracts that had been specifically nominated by firms.

Under Watt's plan, oil companies would propose areas for lease they thought to be most profitable, rather than having the government select them. Characteristic of the Reagan administration's advocacy of market forces, policies changes during this

period such as AWL expanded the industry's access and choice of leasing areas while requiring less government oversight.

Within this laissez faire context, a split in the MMS's organizational ethic developed. Wilder (1993:161) explains that:

Political leadership installed during the Reagan Administration held a political philosophy that placed great emphasis on unhindered natural resource development and relied on market forces rather than oversight by geological specialists. As a result, Reagan appointees took far less scientific, selective approach to offshore management. Soon, tremendous offshore tracts were being offered at much lower prices, allowing the oil industry great leeway. This 'area-wide' approach to leasing permitted industry to obtain sites at low cost and with littler government interference.

In contrast to past federal OCS policy that sought to obtain fair market value for the OCS leases, the Reagan administration gave industry greater access while requiring less compensation and lax government oversight.

Scientists at the MMS experienced great pressure from their managers to approve development plans without proper evaluation of the environmental effects.

According to the National Commission (2011:82):

With regard to NEPA specifically, some MMS managers reportedly "changed or minimized the [MMS] scientists' potential environmental impact findings in [NEPA] documents to expedite plan approvals." According to several MMS environmental scientists, "their managers believed the result of NEPA evaluations should always be a 'green light' to proceed." In some cases, there may also have been built-in employee financial incentives that "distort[ed] balanced decision-making" to the extent that "[e]mployee performance plans and monetary awards [were] . . . based on meeting deadlines for leasing or development approvals."

Moreover, as the volume of lease applications increased, especially in the Gulf of Mexico, MMS regulators were understaffed and underfunded further restricting their capacity to oversee implementation of federal environmental policy. All of these

factors led to the development of a “culture of complacency” concerning compliance with the environmental regulations put forth in NEPA (2011:82).

Congressional moratoria

Finding a common enemy in the Reagan-Bush OCS policy, environmental activists learned to work with states to resist the federal government’s radical policy changes. Beginning in 1982 following the implementation of AWL, annual congressional moratoria became one avenue to express opposition to unregulated OCS development. Wilder (1993:146) explains:

Moratoria operate through the actions of coastal state representatives in Congress; resorting to the federal budgetary process, coastal state representatives yearly insert spending prohibitions in appropriations bills to prevent federal officials from spending dollars for OCS exploration and development even though they are not formally part of the federal OCS planning process.

After the first in 1982, some portion of the OCS has been under a leasing moratoria ever since.

In an attempt to distance himself from the unpopular environmental policies of the Reagan administration, George H.W. Bush campaigned on the promise to end drilling off the shores of California and hoped to end the federal-state conflict over OCS development (Fitzgerald 2001:214). Once elected, Bush issued a 1990 presidential directive that established a moratorium on most OCS offshore drilling that was set to last until 2000. The moratorium excluded the Central and Western GOM regions, but included all areas of offshore in Northern and Central California, Southern California (with the exception of 87 tracts), Washington, Oregon, the North Atlantic coast, and the Eastern Gulf of Mexico coast. Upon taking office in 1998, President Clinton extended the moratorium through 2012 (Energy Information Administration 2005:11).

The Legislative Push into Deeper Waters

In light of the moratoria imposed by the Bush administration, the strategy of the Clinton administration was to encourage OCS development in already developed areas. Therefore, the vast majority of offshore leasing took place in the Central and Western Gulf of Mexico region which is particularly costly to explore and develop. Most significantly, throughout the 1990s offshore drilling pushed to depths never before experienced. According to Boué and Jones (2006:17), production in such deep waters had been relatively recent:

In 1970 the average production weighted depth was just 100 feet, and it was still below 200 feet in 1980. As late as 1990, it had barely reached 250 feet. However, the trend towards a greater production depth was accelerated significantly during the early 1990s, with the weighted average reaching 1000 foot milestone in 1998 (at which point deepwater production became the norm, rather than the exception, in GOM).

Even as late as 2006, production was routinely taking place in 5000 feet of water, and drilling 9000 feet, the record having been set by ChevronTexaco in 2003 at a depth of 10,011 feet (Boué and Jones 2006:17). Incentivized by federal legislation to search for oil in deeper and more treacherous waters, the trend towards drilling in deeper waters in the Gulf of Mexico began in the 1990s and was significantly accelerated throughout the next decade.

Deepwater Royalty Relief Act 1995

At a time of low oil and gas prices, the Outer Continental Shelf Deepwater Royalty Relief Act (DWRRA) sought to spur exploration and production by exempting all fields found in deepwater leases (defined by MMS as greater than 200 meters or 656 feet) issued after November 28, 1995 from royalty payments, and doing away with any administrative process of economic evaluation of need. Following the DWRRA expiration in 2000, the policy was redefined and expanded by the Bush

administration to encourage interest in even deeper waters. So successful was DWRRA in encouraging deepwater development that by 1999 oil production from deepwater wells had outpaced production from shallow wells for the first time (U.S. National Commission 2011:72).

While deepwater exploration was indeed spawned by the DWRRA, it was done at a substantial loss of income from royalties. As Boué and Jones (2006:188) point out:

Deepwater royalty relief is often cited as the supreme example of the unwavering disposition of the US government to do what has to be done in order to give the maximum incentive possible to domestic oil production, chiefly because it represents the explicit abandonment of the principle that public mineral property (seen as a capital accumulated by Nature) should never be surrendered to private parties without fair and proper compensation. In oil circles everywhere, the deepwater royalty relief initiative has been touted as responsible in no small part for the sharp increase in the number of deepwater blocks receiving bids in lease sales held after 1995.

Going even further, in 1998 and 1999, the Clinton administration did away with price triggers (the set market price for oil and gas at which royalty relief kicks in) for all leases for those years. Multiple U.S. Government Accountability Office (GAO) reports since the DWRRA have questioned whether taxpayers have been receiving fair market value for offshore lands as a result of royalty relief (See for example, U.S. Government Accountability Office (2003; 2007; 2008; 2010).

Problems at Minerals Management Service

According to Freudenberg and Gramling (1994:26), “By the 1990s, the Minerals Management Service, whose fundamental goal is the leasing of OCS lands, effectively found itself denied access to those very lands.” Revenue generation had consumed the majority of the MMS’s efforts at the expense of regulatory oversight, something that was openly acknowledged by former MMS Directors for years (U.S.

National Commission 2011:76). In November 1996, the MMS's budget had reached its lowest point ever further hindering its ability to effectively oversee the industry. With the lack of funding came fewer unannounced inspections. As highlighted by a report by the Department of Interior Inspector General, by 1999 MMS inspections had declined significantly and were no longer effective. "Precisely when the need for regulatory oversight intensified, the government's capacity for oversight was diminished" (U.S. National Commission 2011:75).

As the industry moved ever further offshore, the MMS struggled to keep with the evolving deepwater technology and the little training inspectors did receive was inadequate.

According to a recent survey conducted at the request of the Secretary of the Interior, "[a]lmost half of the [MMS] inspectors surveyed do not believe they have received sufficient training." MMS, unlike Interior's Bureau of Land Management (which inspects onshore oil and gas drilling operations), has no "oil and gas inspection certification program" and no exam "is required of each inspector in order to be certified." MMS "does not provide formal training specific to the inspections process, and does not keep up with changing technology. Some inspectors noted that they rely on industry representatives to explain the technology at a facility." (U.S. National Commission 2011:76-7)

Federal salaries at the MMS stagnated and the agency struggled to attract trained and qualified personnel, especially engineers. In the MMS Gulf of Mexico offices, for instance, between 2005 and 2009 the number of permits for offshore drilling increased 71 percent (from 1,246 to 2,136), yet there was not enough qualified engineers to review them. As the agency was overwhelmed with applications, operators began to "shop around" different offices outside of the appropriate jurisdictional area to seek an engineer who would approve the permit (U.S. National Commission 2011:74).

MMS Royalties in Kind program

Beginning in 1997, the process by which the MMS collects royalties from

offshore leases underwent a significant shift. Known as “taking royalties in kind” (or RIK), this process allocates a certain percentage of the oil and gas produced to MMS that it can then either transfer to other federal agencies or it may sell to refineries. Accepting payment in the form of oil and gas differed from MMS’ former policy of accepting cash payments based on the value of oil produced, known as “royalty in value” (RIV). The switch from RIV to RIK advantaged the oil industry since it reduced administrative costs and made it so leases would not be subject to audit, despite being worth millions (and sometimes billions) of dollars (U.S. Department of Interior 2008:8). As the Project on Government Oversight (2008:4) argues, “Essentially, the RIK program asks taxpayers to trust that industry delivers the correct amount of oil or gas to the government in lieu of cash, but has reduced oversight to such a degree that the GAO labeled RIK’s management “an honor system.” Furthermore, the primary source of RIK revenues comes from the Gulf of Mexico region where nearly 72 percent of crude oil royalties and 45 percent of gas royalties were garnered through the program in 2005 (Project on Government Oversight 2008:6).

Initially, MMS was publicly against the implementation of RIK citing concerns over reduced revenues, though it did not take long for the agency to align its view with that of the industry (U.S. Government Accountability Office 2003). Extensively lobbied by the oil industry, the George W. Bush administration also favored the RIK program, and received encouragement from the American Petroleum Institute:

In 2001, a memo from the American Petroleum Institute to Vice President Dick Cheney’s energy task force stated that “RIK should be considered part of a comprehensive national energy strategy and a permanent tool for the Minerals Management Service to use in fulfilling its mission.” The memo also stated industry’s opposition to paying for royalties in cash, and detailed industry’s legal challenges aimed at halting the government’s efforts to establish regulations for fair market-based royalty payments. (Project on Government Oversight 2008:11)

The RIK program therefore became an important part of the Bush-Cheney energy strategy. As RIK continued to blossom, so did the relationship between MMS and the oil industry. Encouraged by exploration into ever deeper waters, lavish royalty relief programs facilitated an increasingly close relationship between the oil industry and MMS. Attesting to the “revolving door” between government and industry, there were multiple examples of high ranking DOI and MMS officials serving during the Bush administration that left their appointments to go work for companies they formerly oversaw (Project on Government Oversight 2008:12-14).

The Energy Policy Act of 2005 which President Bush signed into law on August 8, included provisions that utilized royalty relief to stimulate offshore oil and gas production in both the shallow and deepwater of the Gulf of Mexico (Energy Information Administration 2005:17). In addition to royalty relief, the Bush administration also banished longstanding moratoria on OCS development. Capitalizing on the high gas prices and faced with upcoming elections, in 2008 Bush used the opportunity to lift a presidential drilling moratorium that wasn't set to expire in 2012, put in place by his father and later extended by Clinton. Going even further to provide industry access to offshore lands, Congress allowed a twenty year prohibition on offshore drilling to expire later that year (Pelofsky and Daggett 2008).

On the whole, the Obama administration's offshore oil policies did not initially differ significantly from that of the Bush administration. Like the prior administration, Obama favored a continuation and expansion of deepwater exploration and royalty relief through the RIK program. Despite the objection of environmental activists that opposed the controversial appointment, President Obama selected Ken Salazar to be Secretary of Interior. Graced with the support of the oil industry, Salazar was criticized by environmentalists for having a weak conservation record, especially

concerning energy development, global warming and protecting scientific integrity (Broder 2008).

Reversing his campaign promise, President Obama, alongside Secretary Salazar, continued in the tradition of their Republican and Democratic predecessors by encouraging offshore exploration in deeper and unexplored territories. Just weeks before the BP Gulf of Mexico spill on March 31 2010, the Obama administration gifted the oil industry expansive access to the OCS when he announced the opening of 167 million acres of offshore lands for leasing, most of which had never before been leased. In addition to expanding leasing in the Central Gulf of Mexico, the proposal ended a longstanding moratorium along the East Coast ranging from the northern tip of Delaware to the central coast of Florida. The chief beneficiaries of the proposed leasing expansion were the largest U.S. offshore oil producers: BP, Shell and Chevron (Broder 2010). Despite this support, the pervasive industry influence in the MMS RIK program became glaring in the early months of the Obama administration and Secretary Salazar was forced to acknowledge the corruption.

Normalization of Deviance: The MMS Royalty-in-Kind Program Scandal 2008

Epitomizing the intimate relationship between the MMS and the offshore oil industry, in 2008 Congressional reports revealed that up to a third of the MMS department employees involved in the royalties-in-kind (RIK) program had been engaged in serious misconduct over the past several years including rigging oil contracts, taking money as oil consultants and having sexual relationships and using drugs with oil and gas company representatives. The investigation into the MMS RIK program based in Denver, Colorado uncovered a pattern of ethical failure that revealed “a pervasive culture of exclusivity, exempt from the rules that govern all other

employees of the Federal Government” (U.S. Department of Interior 2008, no page number). As the report explains:

...the results of our investigation reveal a program tasked with implementing a “business model” program. As such, Royalty in Kind (RIK) marketers donned a private sector approach to essentially everything they did. This included effectively opting themselves out of the Ethics in Government Act, both in practice, and, at one point, even explored doing so by policy or regulation. (U.S. Department of Interior 2008, no page number)

In an attempt to codify their unique relationship with industry and exempt themselves from the guidelines governing all other federal employees, MMS RIK employees formed a study group to consider altering the rules in June 2006 (U.S. Department of Interior 2008:6-7). One document titled “The Initiative to Clarify Guidance for RIK Interaction with Industry” stated that:

It is clear that the Federal government ethics/procurement rules do not offer unambiguous guidance to RIK staff and management. It seems logical that these rules/policies, developed in the context of government in an adjudicator role for the regulated community, do not provide clear guidance, since they do not envision government as business counterplay in a commercial marketplace. (U.S. Department of Interior 2008:6)

Without any oversight and regulation, employees of the MMS RIK program and the oil industry had melded to become one. Far from being perceived as “deviant” activity, intimate fraternization between MMS and the industry had become the norm, enough to even consider legally codifying the relationship. This normalization of deviance had become so ingrained that employees of the RIK program sought to legalize their intimate relationships with industry that were prohibited by federal law. After the fallout from the RIK scandal, on September 16, 2009, DOI Secretary Ken Salazar was forced to announce that it was time to end the RIK program.

Nevertheless, while the RIK program may have been terminated, the influence of the oil industry continued to pervade the MMS organizational culture.

Allegations of inappropriate relations with the oil industry are not unique to the MMS RIK office in Denver. MMS officials at the Lake Charles Louisiana district office that oversaw drilling in the Gulf of Mexico were investigated in 2010 for accepting gifts from industry representative such as meals, tickets to sporting events, and hunting and fishing trips. The report found "...that a culture of accepting gifts from oil and gas companies was prevalent throughout the MMS Lake Charles office..." (U.S. Department of Interior 2010:1). Following a 2007 investigation and termination of one regional MMS supervisor of the New Orleans office for accepting gifts from an offshore drilling contractor, employees at the Lake Charles office appeared to drastically decrease their participation in these illegal behaviors. It seems that the MMS organizational culture was plagued at the highest levels by corruption, setting the tone for other members of the agency.

The interviews conducted by the Inspector General highlight the inseparableness of the offshore industry and government regulators at the MMS:

According to [MMS Lake Charles District Manager Larry] Williamson, many of the MMS inspectors had worked for the oil and gas industry and continued to be friends with industry representatives. "Obviously, we're all oil industry," he said. "We're all from the same part of the country. Almost all of our inspectors have worked for oil companies out on these same platforms. They grew up in the same towns. Some of these people, they've been friends with all their life. They've been with these people since they were kids. They've hunted together. They fish together. They skeet shoot togetherThey do this all the time." (U.S. Department of Interior 2010:3)

Williamson's description shows how the intimacy between MMS and offshore industry goes far beyond formal organizational relations, and extends into regional, cultural,

social and personal histories of these employees. Their shared experience is clear: “Obviously, we’re all oil industry.”

By the time of the Deepwater Horizon explosion, regulation of the offshore industry had deteriorated to little more than a formality. Created in the era of declining regulation amidst increased privatization, the scandals that plagued the MMS are rooted in the fundamental organizational dynamics of the agency. When Secretary Watts merged the USGS with the BLM, two competing missions came to dictate the MMS: collection of royalties and regulation of offshore development.

Over time, the MMS began to operate under a business model, offering industry more offshore leases of greater swaths of the Gulf of Mexico. As the industry expanded into deeper waters, the MMS experienced cuts in funding that hindered its ability to keep pace. Furthermore, the MMS was unable to adapt its regulatory framework to address the new proliferation of specialized contractors relied on by the offshore industry. As the National Commission (2011:74) explains:

When the lessee directly regulated by the government is itself not performing many of the activities critical to well safety, that separation of functions poses heightened challenges for the regulator. But there was no apparent effort by MMS to respond to those challenges by making the service companies more accountable.

The MMS and the DOI were unable to effectively regulate the rapidly evolving industry and the increasing reliance on outsourced contractors.

Catering to the industry’s interests became an implicit part of the MMS’s mission and corruption became a pervasive part of the organization in multiple sectors. Due to the revolving door between government and industry, most of the employees at the MMS had at some point worked for the private sector and maintained deep bonds with friends in the industry that are rooted in the region, culture and personal histories. Even after attempts by Secretary Salazar to reform the MMS following the 2008 RIK

scandal, the closeness between the MMS and the industry had become far too pervasive to prevent the blowout of the Macondo well.

Conclusions

As guardian and administrator of the nation's offshore resources, the federal government has profited immensely from the private leasing of public offshore lands. Above all else, revenue from offshore leases has been the primary goal behind federal expansion of deepwater exploration and development. Regardless of their political party, each presidential administration has thus played a key role in supporting legislation that paved the way for drilling in deeper waters within the Gulf of Mexico. Repeated offshore disasters such as the 1969 Santa Barbara oil spill have helped to raise awareness of the need for increased safety and environmental oversight in the oil industry and have even provided the impetus for monumental environmental legislation to be passed. However, these reforms were largely superficial and development of the offshore industry consistently superseded environmental protection.

Particularly since the Reagan administration, federal policy has allowed regulation and development of the OCS to become increasingly controlled by the oil industry itself. Although the relationship between the offshore industry and the Department of Interior was close from the beginning, it only became closer as drilling moved into deeper waters. Federal legislation has provided the opportunity for corporations to take additional risks by reducing the royalties on OCS leases in deep water while simultaneously weakening regulatory oversight, especially in the Gulf of Mexico.

As the offshore industry expanded, employees at the underfunded and inadequately staffed MMS turned to illegal means to perform their jobs. Fraternalizing with oil industry representatives had become a normal part of the culture at the MMS

despite federal ethics guidelines that prohibited such close interactions. By the time its employees were having sex and doing drugs with oil industry representatives, the regulatory mission of the MMS was overcome by the shared goal of profit both for the federal government and the offshore industry. Lacking any regulatory controls, the disintegration of federal oversight further allowed the offshore industry to take additional risks in the pursuit of profit.

SECTION II: CAUSES OF THE DEEPWATER HORIZON EXPLOSION

CHAPTER THREE: CORPORATE ACTORS

The explosion of the Deepwater Horizon rig and the blowout of the Macondo well in the Gulf of Mexico was the end result of policies and actions of three crucial corporations: BP, Transocean, and Halliburton. In reality, however, the complex corporate arrangements that led to the disaster were far more complicated due to the reliance on private contractors to provide services to the Deepwater Horizon. Nonetheless, as the majority shareholder of the Macondo well and the lessee of the Deepwater Horizon, BP had the primary legal responsibility for overseeing operations on the rig. The Deepwater Horizon rig was owned and operated by Transocean, who employed the vast majority of the rig's crew and consequently most of those who were killed in the explosion. Completed by Halliburton just hours before the explosions, the faulty cement job was identified by the National Commission as a contributing factor to the blowout. Both BP and Transocean were responsible for the operation and maintenance of the rig's blowout preventer, the last line of defense against an uncontrolled flow of oil from the well. Due to their essential role in causing the blowout, the history, structure and culture of each of these corporations must be considered.

Overarching Failure of Management at BP, Transocean, Halliburton

As the primary culprit and the corporation most directly responsible for the disaster, greater attention will be given to the organizational culture of BP and its long history of recklessly perpetrating human and environmental harm both onshore and

offshore. Major restructuring of BP's corporate culture occurred during the reign of the company's superstar CEO, Lord John Browne. During his tenure as CEO from 1995- 2007, Browne rapidly propelled BP from a fledging oil company to an industry leader. After undergoing numerous acquisitions and mergers with other large companies including Amoco and Arco, Browne radically decentralized BP, reduced levels of management, and incentivized cost cutting. These policies created an organizational culture which lacked oversight while encouraging risky behaviors at the cost of worker and environmental safety. It did not take long for Browne's corporate vision to become a reality that led to a series of disasters at BP's facilities onshore and offshore in the years before the Gulf of Mexico spill.

Yet BP's culture of deviance did not develop in isolation, but resulted from broader historical, political and economic forces that similarly shaped other offshore corporate cultures as well, including Transocean and Halliburton. One of the most significant findings identified by the U.S. National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling was an overarching failure of management at not only BP, but Transocean and Halliburton as well. Had there been better management, risks would have been properly identified, communicated and addressed (U.S. National Commission 2011:90). For instance, BP's management failed to adequately address the risks created by changes to the well design and procedures (2011:122). Last minute changes to the well design and cementing procedures were not subject to peer review or management of change processes. "At Macondo, such decisions appear to have been made by the BP Macondo team in *ad hoc* fashion without any formal risks analysis or internal expert review. This appears to have been a key causal factor of the blowout" (2011:123).

The problems of management and communication existed not only internally at BP, Transocean and Halliburton, but extended out between the companies and their contractors as well. The National Commission found that information was excessively compartmentalized and contractors did not share key information with each other or BP. “As a result, individuals often found themselves making critical decisions without a full appreciation for the context in which they were being made (or even without recognition that the decisions *were* critical)” (2011:123).

A thorough evaluation of the mismanagement at BP, Transocean and Halliburton must not obscure the systemic nature of the disaster and its rootedness in the nexus of government and the offshore oil industry. Stressing the need to address these fundamental relations, the National Commission (2011: 122) concluded:

The blowout was not the product of a series of aberrational decisions made by rogue industry or government officials that could not have been anticipated or expected to occur again. Rather, the root causes are systemic and, absent significant reform in both industry practices and government policies, might well recur. The missteps were rooted in systemic failures by industry management (extending beyond BP to contractors that serve many in the industry), and also by failures of government to provide effective regulatory oversight of offshore drilling.

British Petroleum (BP)

British Petroleum (BP) has a long, bloody international history since its inception. Making their fortune from the large oil discoveries in Iran (then Persia), the Anglo-Persian Oil Company had a close relationship with the British government over the years and was essential in facilitating the shift of the Royal Navy from operating on coal to oil. Following Iran’s nationalization of its oil industry in 1953, BP was forced out of the country, halting Britain’s access to Iranian oil. In reaction, Winston Churchill urged the CIA in conjunction with M16 to launch a coup d’état on

democratically elected prime minister Mohammed Mossadegh, thereby returning BP's foothold in the middle east (Bergin 2011:4). But the fight over Iran's oil was only one of the many injustices committed by British Petroleum in pursuit of dominance in the global oil industry. In the decades that followed, BP began to grow and diversify its operations in the Middle East, the North Sea, as well as Alaska. Both in the U.S. and abroad, BP would experience catastrophic incidents at each stage of production from extraction of oil onshore and off, to transportation, and refinement.

Lord John Browne, BP CEO 1995-2007

By the 1980s BP's reputation dwindled and it was considered a "two pipeline company" by industry rivals that had been in danger of going under. Largely guided by the leadership of Lord John Browne who became CEO in 1995, BP went from a minor player to an industry leader within less than a decade. Like his father before him, Browne started his career at BP out of college, beginning with a team exploring the northern coast of Alaska at Prudhoe Bay in 1969. Following in the footsteps of CEO Bob Horton who had closely mentored him during BP's turnaround of Standard Oil of Ohio (Sohio) in the 1980s, Browne had earned himself a reputation as an aggressive cost cutter who embraced risk. By 1980, Browne had been appointed by Horton as the head of Exploration and Production (known as BPX), BP's most profitable unit. It was during his time as head of BPX that Browne began to implement his policies of outsourcing, decentralization and cost cutting (Bergin 2011).

His rapid success in turning BP around earned him a superstar-CEO status in Britain. Bergin (2011:5) describes:

His achievements saw him voted the UK's 'most admired' business leader four years in a row- an unprecedented endorsement. It prompted *Fortune* magazine to declare him the most powerful man in business outside America, saw the *Financial Times* dub him the 'Sun King', while the left-leaning *Guardian* declared him 'the nearest thing British business has to a rock star'. His success earned him a knighthood, an

appointment to the House of Lords and a fortune worth tens of millions of pounds. In the eyes of the public and most BP employees, he was the very embodiment of BP

Breaking the stereotypical image of the rugged Big Oil CEO, Browne never drove a car but preferred to ride in a limo. He was a man of refined tastes who enjoyed tailored suits, the opera and the services of a butler. Never marrying and living with his mother until her death, many people had speculated about Browne's sexuality, but he was not openly gay until a "kiss and tell" tabloid story leaked by a former lover forced his resignation as CEO in 2007 (Bergin 2011:6).

Though highly intelligent, those close to him described Browne as unemotional and detached which at times contributed to falling outs with friends. Following his retirement, Browne remarked to a journalist that in his 40 years at BP, he never lost a single night's sleep due to concerns about work. "If one was the sort of person to lose sleep over work, he told the journalist, one could not be a CEO" (Bergin 2011:7). Browne's calculated callous nature no doubt made it easier to implement his brazen company policies.

A small group of BP's rising star executives which came to be known as the "turtles" (since they had to travel with their home on their backs), were closely mentored and favored by Browne and traveled everywhere with him. These executives were groomed in Browne's image, ultimately to become his successor and included Tony Hayward, John Manzoni, and Bob Dudley, among others (Bergin 2011:27-30). Such intensive training ensured Browne's aggressive cost cutting strategies continued beyond his reign.

Organizational Changes

Developed and put in place during his leadership of BPX, Browne's revolutionary changes to BP's organizational structure truly came to fruition during

his time as CEO. As BP continued to undergo mergers and acquisitions, the company became more decentralized and relied increasingly on outsourced services from private contractors. Big oil fields or clusters of small ones functioned like separate, stand alone companies and made decisions independent of BP's central bureaucracy. Under Browne's plan, the central bureaucracy of the company disintegrated, and the role of top executives would become to simply fund the projects. In theory, Browne rationalized that these changes would encourage entrepreneurship and maximize profit (Bergin 2011:22). Managers were incentivized to meet a limited number of short term goals to increase production levels while decreasing cost. Although some people within the company raised concerns that this led to a tendency to put off necessary upgrades and improvements that might show up in the bottom line, Browne was not convinced. "One of the big problems at BP, as he saw it, was that the engineers who called all the shots wanted to 'gold plate' every platform, refinery and pipeline" (Bergin 2011:24).

The decentralization, outsourcing and cost cutting policies while BP was undergoing multiple mergers and acquisitions resulted in rapid growth without proper management and oversight. Over the decades that followed, the effects of Browne's policies came to be actualized as persistent accidents throughout BP's facilities worldwide, ultimately setting the stage for the Deepwater Horizon blowout. Incrementally, the disintegration of the company led to a normalization of deviance which rewarded risk taking among management at the expense of workplace infrastructure and safety.

Amoco merger

In August 1998, BP acquired Amoco, at the time the fourth largest US oil producer. The BP-Amoco merger was the largest industrial merger ever at the time

and the integration of the two companies was difficult amidst severe job cuts, mostly through early retirement. Amoco had developed an organizational culture that fostered deep technological expertise, something BP was desperately lacking for decades. However, BP did not utilize this strength of Amoco's structure. Instead, the merger had been all about cost cutting rather than technological refinement (Bergin 2011:35).

Furthermore, just as the BP takeover of Amoco occurred, in 1999 Browne issued a 25 percent cost cut target across the company which placed enormous pressure on managers to avoid necessary, though costly, upgrades and safety features at Texas City and other BP plants. According to Bergin (2011:36):

The brutality of the integration process and the performance-related remuneration packages meant only ambitious, ends-focused people felt at home at BP. Managers who cared about means and broader measures of performance beyond production and cost levels increasingly did not see a role for themselves at the company.

Shortly after the purchase of Amoco, BP bought six other companies, including Arco: Lord Browne had gone on a "buying spree" (Public Broadcasting Station 2010). After purchasing Arco for \$27 billion, BP overcame Shell for the number two spot in the US oil market. Throughout the mergers and acquisitions, Browne continued to decentralize BP's organizational structure including responsibility for ensuring compliance with health, safety and ethical matters.

Offshore operations

Considered a late-comer to offshore oil drilling, the BP-Amoco merger also gave BP control over Amoco's profitable natural gas operations in the Gulf of Mexico. According to Boué and Jones (2006:298), "As far as BP goes, this company succeeded in carving out a position for itself in the deepwater despite its later starter status, but only by taking enormous risks and running bills that very few companies would have had the resolve or the resources to imitate."

The company had been involved in offshore drilling prior to the BP-Amoco merger, but BP benefited immensely by sharing technology and patents with Shell on the Mars project which started in 1992 and began production in 1996. Located in the Mississippi Canyon Block in the northern Gulf of Mexico, the permanent drilling and producing Mars oil platform reached depths of 2,940 feet. At the time, Shell was the established industry expert in offshore operations, leading the charge into increasingly deeper waters. Since the Mars prospect was viewed as a risky endeavor, Shell invited BP to participate as financier, granting them a 28.5 percent share of the project.

The partnership benefited BP the most, since the company had no deepwater experience in comparison to Shell who had been the deepwater leader at the time. Essentially, Shell relinquished to BP half a century of pioneering knowledge and technology of offshore oil drilling (Priest 2007a:256). As Priest (2007a:260) explains:

The deal let BP in on the deepwater Gulf of Mexico business, giving its managers and engineers a close-up view of all aspects of Shell Oil's operations, from its exploration and reservoir evaluations models to its drilling and production techniques. With nothing in deepwater, BP 'went to school' and subsequently staked out a big position in the Gulf. By 2004, the British oil giant was the largest leaseholder and, after Shell E&P Company, the second-largest producer in the deepwater.

During Hurricane Katrina in 2005 the rig experienced damage which temporarily forced it out of commission, though oil production from the Mars project still continues today. Through the Mars project, BP acquired centuries of technical knowledge and expertise without the concomitant experience and responsibility necessary to fully appreciate the implicit dangers of deepwater drilling.

Prior Offenses

As the century turned, Browne's policies began to take their toll. In the decade leading up to the Gulf of Mexico spill, BP had been responsible for numerous accidents, spills, injuries and deaths at its onshore and offshore facilities in the US

and abroad. In fact, at the time of the Deepwater Horizon explosion, BP was on probation for previous violations and was under investigation by the Department of Interior, the Department of Justice and the Department of Labor: BP was a known repeat offender (Public Broadcasting Station 2010). Each of these disasters should have been a signal of the dire shape of the company and could have provided an opportunity for reflection, reform or even reprimand. Unfortunately, they did not.

Texas City refinery explosion, March 2005

Before the Deepwater Horizon, BP had been faulted for the “biggest industrial accident in decades.” BP’s 1,200 acre Texas City, Texas refinery was acquired in 1998 as part of the \$61 billion acquisition of Amoco. Even after the merger, the majority of the staff and managers at Texas City were almost exclusively former Amoco employees (Bergin 2011:81). Built in 1934, the facility was sorely in need of costly maintenance and upgrades at the time BP acquired it and was further allowed to degrade. On March 23, 2005 an explosion occurred at the plant which resulted in 15 deaths and 180 injuries. The problems with safety had been well known by workers and management alike, yet internal memos and emails indicated that BP had discussed, and then opted not to install the necessary \$150,000 upgrade that would have prevented the explosion. In the thirty years leading up to the Texas City refinery explosion, there had been 23 worker deaths at the plant, averaging about one death every 16 months (Public Broadcasting Station 2010).

An independent inquiry into the Texas City disaster led by former Secretary of State James A. Baker III conducted hundreds of interviews with employees at the plant and uncovered weak leadership within BP and a deficit of attention to effective safety measures. Among other findings, the report noted fundamental problems in BP’s “decentralized management system and entrepreneurial culture,” which left safety

processes to the discretion of managers and did not define what was expected of them” (Timmons 2007). Furthermore, the report cited that workers at BP’s US refineries were thinly staffed, overworked and were reluctant to report accidents and safety concerns to superiors for fear of repercussions. While the report failed to conclude that BP purposely reduced spending on safety, it did note that aggressive cost cutting practices were an important factor. For example, “At the Texas City refinery, total maintenance spending fell 41 percent from 1992 to 1999, and total capital spending fell 84 percent from 1992 to 2000. On top of those cuts, BP challenged its managers to reduce costs by 25 percent after its merger with Amoco in 1999” (Timmons 2007).

According to the report of the U.S. Chemical Safety Board (CSB), an independent federal agency with the responsibility for investigating industrial chemical accidents though lacking enforcement power, internal documents demonstrated that global BP management had “significant knowledge” of its problems with maintenance, spending and infrastructure not only at the Texas City refinery, but many of BP’s business units around the world. The U.S. Chemical Safety Board (2006) noted:

A 2004 BP Group internal audit of 35 business units including Texas City found significant common gaps, including a lack of leadership competence which pointed to “systematic underlying issues,” widespread tolerance of noncompliance with basic safety rules, and poor implementation and monitoring of safety management systems and processes.

As mandated by the OSHA Process Safety Management standard, oil refineries are required to conduct “management of change” safety reviews in which a formal process analyzes and documents the ramifications of changes in safety procedures. The CSB noted longstanding problems with the management of change process at Texas City. As Merrit (2007) explains:

As described in our report, a number of design and equipment changes were never evaluated under BP's management of change policy, even though the refinery had designated the equipment as "safety critical." Our report also notes that BP management allowed operators and supervisors to alter, edit, add, and remove procedural steps without conducting management of change reviews to assess the safety risk.

In the end, BP paid victims and their families over \$1 billion on the condition that they can never criticize BP or the event publicly. Following multiple independent and government investigations into the accident, BP was sanctioned with \$71 million in fines. However, no officials were ever found responsible, charged with crime or held accountable for the incident (Public Broadcasting Station 2010).

Even after the fatal events at Texas City in 2005, deaths at the refinery continued and BP neglected to address safety violations. In October 2009 the Occupational Health and Safety Administration fined the company \$87.4 million for failing to address the violations. At the time, this was the largest ever fine imposed by OSHA, even surpassing the original \$21.3 million fine for the 2005 event itself (Bergin 2011:132). Tony Hayward argued that the Obama administration sought to send a tough message to the entire industry and that they were making an example of BP with such excessive fines. However, according to Bergin (2011:133):

The fact was that, even if one stripped out the 709 citations OSHA announced in October 2009, BP's U.S. refineries would still have been way ahead of their rivals in breaching regulations. Between June 2007 and February 2010, BP incurred 862 citations from OSHA compared to 127 for Sunoco, the next worst offender, and 119 for ConocoPhillips, the third worst offender.

Even among its peers in the industry, BP stood out as an extreme offender of safety violations. Despite all of these violations, BP's stock continued to remain profitable for its investors, providing little incentive to make substantial reforms.

Thunder Horse rig accident, July 2005

Completed in 2004 at a cost of over \$5 billion, the state of the art Thunder

Horse rig was BP's showcase platform symbolizing the company's ability to innovate and push technology to the limits. Yet the rig quickly came to symbolize BP's hubris. Even before it began to pump oil, the 43 story rig nearly toppled over into the Gulf of Mexico during Hurricane Dennis in July 2005. Following an investigation, it was revealed that the damage was not caused by the hurricane. Rather, in a rush to finish the project BP engineers had incorrectly installed valves used to control the flow of water in the stilts keeping it afloat: a check valve installed backwards had caused it to take on water rather than dispose of it (Lyll 2010). Bergin (2011:91) contends that "The flaws were the direct result of BP's design, chosen in the hope of meeting Browne's overly ambitious production targets...The combination of an ambitious design, a rushed delivery and BP's eroded technical capability made problems almost inevitable."

Prudhoe Bay, Alaska oil spills 2006

In 2006, BP was also responsible for what at the time was considered the second worst oil spill in Alaska's history next to the Exxon Valdez. Also partially owned by ConocoPhillips and Exxon Mobil, the Prudhoe Bay facility is the largest oil field in the US. Opened in the 1960s, the infrastructure at the facility had been designed to last twenty years before being replaced. The facility operated on a "run everything to failure" policy in which upgrades were only implemented after the infrastructure had failed (Public Broadcasting Station 2010). In March 2006, pipeline corrosion led to a leak that went undetected for a week and resulted in a spill of over 6,350 barrels (260,000 gallons) of oil. Just a few months later a second spill occurred in August leaking 25 barrels of oil and forcing BP to halt production altogether at the facility and causing a notable spike in oil prices throughout the country. As a result of the spills, BP was ultimately forced to replace 16 miles of corroded pipeline at the

price of \$250 million and undertook a reorganization of the management structure at the Alaska facility.

To evaluate its corrosion control program at Prudhoe Bay, BP hired the consulting firm Booz Allen Hamilton. The report produced by the firm revealed that: 1) the leak detection systems were inadequate and emergency shutdown procedures were not clear or enforced, 2) corrosion inspection and monitoring programs were static and did not change in response to external factors, 3) audit processes focused on issues other than corrosion or were ignored entirely, and 4) poor communication links made it difficult for senior managers to get useful information from line managers. Furthermore, the report noted that “BP’s budgeting process did not provide transparency on the risk trade-offs to senior managers. Budgeting was largely driven by top-down targets” (“Key Findings” 2007). It is interesting to note, however, that BP was later questioned by congressional investigators about its attempts to delete a key finding in the Booz Hamilton report that identified “budget pressure” as a contributing factor to the Alaska oil spills (Baltimore 2007).

Commonalities can be found between the events in Texas City in 2005 and at Prudhoe Bay in 2006. Carolyn Merritt, the chairman of the Chemical Safety Board who examined the Texas City incident, was asked to review the report prepared by Booz Allen Hamilton in response to the 2006 accident and offers a number of insights. The Booz Allen report refers to a “normalization of deviance” at the Prudhoe Bay facility in which “risk levels gradually crept up due to evolving operating conditions” of the pipelines. Comparatively, Merritt (2007) stated that “We observed a similar indifference to growing catastrophic risk in our Texas City investigation.” Risk and deviance, it seems, had become a pervasive and normalized part of BP’s safety culture.

Congressional hearings were held in 2006 to examine what had gone wrong

with BP's pipeline in Alaska. Hearings were again conducted in 2007 to assess the progress BP had been made with the pervasive pipeline corrosion since the spills. Forebodingly, the title of the hearings asks, "The 2006 Prudhoe Bay Shutdown: Will Recent Regulatory Changes and BP Management Reforms Prevent Future Failures?" The investigations stressed that BP undertook severe cost cutting measures between 1999 and 2005 and that this may have contributed to pipeline corrosion. According to the internal documents provided by BP to the committee, "...cost cutting pressures on Prudhoe Bay operations were severe enough that some BP field managers were considering reducing or halting the range of actions related to preventing or reducing corrosion" (Prudhoe 2007:2).

Criminal investigations of BP

As early as 2004, corrosion technicians and others had begun to raise concerns that a corrosion-related pipeline rupture at the Alaska facility was likely to occur. Scott West, the special agent-in-charge at the Environmental Protection Agency (EPA) Criminal Investigation Division, had been investigating alleged crimes in connection with the 2006 pipeline rupture and was planning to bring felony charges against BP and the company's senior executives. Conducted in coordination with the FBI, the DOJ and Alaska state environmental and regulatory officials, West's probe was one of the top two environmental crime cases being handled by the EPA in 2007. The investigations uncovered millions of documents and ample evidence to prosecute BP for criminal charges.

These efforts, however, were thwarted when the Bush administration's DOJ opted to charge the company with only a misdemeanor violation of the Clean Air Act, thereby abruptly putting an end to West's criminal investigation of BP. The charge, many felt, amounted to a "slap on the wrist" and as a result, no BP executives faced

any criminal liability for the Alaska spills (Lindner 2010; Leopold 2010). Surprised by the actions of the DOJ, West commented “Never ...have I had a significant environmental criminal case shut down by the political arm of the Department of Justice, nor have I had a case declined by the Department of Justice before I had been fully able to investigate the case. This is unprecedented in my experience” (Public Employees for Environmental Responsibility 2008).

The DOJ’s decision to leniently sanction BP with a misdemeanor rather than pursue felony criminal charges might be part of a larger trend in the prosecution of corporate criminals during the Bush administration. Between 2005 and 2008 the DOJ opted to defer prosecution of more than 50 companies suspected of wrongdoing by using “deferred prosecution agreements.” Deferred prosecution agreements allow businesses to escape the cost and stigma of battling criminal charges by permitting them to avoid trial and instead pay fines and appoint an outside monitor to implement internal reforms (Lichtblau 2008). These types of agreements had been scarcely used in the past, but the Bush administration employed them widely in dealing with companies (though not with individuals) in cases of financial crimes, export control violations, kickbacks and environmental violations, rather than prosecution. Letting potentially criminal corporations off the hook, “In general, such agreements result in companies acknowledging wrongdoing by not contesting criminal charges, but without formally admitting guilt. Most agreements end after two or three years with the charges permanently dismissed” (Lichtblau 2008).

Caspian Sea blowout 2008

In September 2008, a BP rig in the Caspian Sea off the coast of Baku, Azerbaijan experienced a blowout caused by many of the same factors as the Deepwater Horizon. In both cases BP had opted to use “quick dry” cement infused with nitrogen bubbles,

yet this more risky decision can lead to nitrogen bubbles forming channels in which oil and gas can escape up through the well. After the blowout, with the help of the Azerbaijan government and with the silent collusion of Exxon and Chevron, BP attempted to conceal the incident from the other companies as well as the Bush administration. In fact, the full story was not made public until late 2010 when Wikileaks released a secret cable from the U.S. Embassy to the State Department in Washington laying out the whole story of the 2008 Caspian blowout. Had the facts of this case been known sooner, there is a chance that the Deepwater Horizon explosion could have been prevented (Palast 2011).

Consistently, BP has escaped liability for its human and environmental harms across the globe. In every instance, BP was able to evade responsibility for its actions. Despite countless government fines totaling millions of dollars, the company failed to address the failures of organizational management put in place by John Browne, even after a change in leadership. Rapid expansion coupled with increasing decentralization and diminishing oversight made workplace accidents and spills inevitable. Yet even in the face of multiple disasters the company's stock remained unfazed and BP refused to learn from its mistakes. Rather than deter or prevent another accident, the deaths, injuries, penalties and fines simply became a cost of doing business, unable to impede the reckless drive to the top of the industry.

Transocean

The Deepwater Horizon rig was built in 2001 by Hyundai Heavy Industries at a price of \$560 million (Jordans and Burke 2010). The rig, however, was owned and operated by the world's largest offshore drilling operator, Transocean. Transocean drills in over 30 countries and employs more than 18,000 people. In 2001, the *Deepwater Horizon* set a new world record when it drilled the Macondo well on behalf

of BP. Reaching depths of 35,055 feet, the more than six miles long well operated in 4,130 feet of water (Transocean 2011). At the time of the explosion, BP was Transocean's biggest client in the Gulf of Mexico. BP had recently extended its \$500,000 a day contract for Transocean's Deepwater Horizon to continue drilling the Macondo well and there was great pressure from BP's management to finish the cement job (Casselmann 2010).

Prior Problems with the Deepwater Horizon Rig

Under Transocean's operation, the Deepwater Horizon rig experienced multiple incidents during its ten year life. Just months after being launched from a shipyard in South Korea in February 2002, the Deepwater Horizon leaked 267 barrels of oil into the Gulf setting a pattern that was to continue. Moreover, in June 2003 the rig floated off course and released 944 barrels of oil into the Gulf, followed quickly by a loss of 74 additional barrels of oil the next month. Under contract from BP, the Deepwater Horizon leaked 212 barrels of an oil based lubricant in November 2005 and in January of the same year 15 gallons of overflowing diesel fluid led to a fire (Jordans and Burke 2010).

Past Accidents

While the explosion of the Deepwater Horizon rig was perhaps Transocean's most devastating accident, it was certainly not the first. The company has had a long and troubled history dating back to 1979 under the name Sedco, when it was run by Governor of Texas Bill Clements and his family. At that time, this blowout in the Gulf of Mexico was the worst the world had ever seen. Claiming that the rig was unseaworthy and the crew was poorly trained, the federal government sought \$12 million in damages, but Sedco managed to pay only \$2 million. Sedco was sold to

Schlumberger in 1984, which later transferred its offshore operations to what became Transocean Offshore in 1999 (Mattera 2010).

Over the past decade, Transocean has been faulted for numerous accidents that have resulted in significant environmental damage and human harm. For example, in 2000, Transocean was responsible for an eight ton anchor accidentally falling from a rig in the Gulf of Mexico and rupturing an underwater pipeline thereby resulting in a spill of nearly 100,000 gallons of oil. Off the coast of Texas in 2003, a fire broke out on a Transocean rig killing one worker and injuring many others. Moreover, a Transocean rig in the North Sea in 2005 experienced similar problems as the 2010 spill in the Gulf (Mattera 2010). Additionally, in 2008 eight people were killed off the coast of Scotland when a support vessel capsized while towing a massive chain used to position a Transocean rig. Missteps by Transocean and other parties were found to be a contributing factor in the accident (Meier 2010).

Although spills, fires and accidents such as these are not unique to rigs operated by Transocean and frequently occur throughout the industry due to equipment failure, human error and environmental damage, the company had a particularly bad track record not only on the Deepwater Horizon but on other rigs as well. Transocean had an increasing number of federal investigations and a declining reputation among oil companies that hired them. “Nearly three of every four incidents that triggered federal investigations into safety and other problems on deepwater drilling rigs in the Gulf of Mexico since 2008 have been on rigs operated by Transocean, according to an analysis of federal data” (Casselman 2010). Noting an increase in incidents by Transocean following a November 2007 merger with rival GlobalSantaFe, Casselman (2010) notes that “In 2008 and 2009, the surveys ranked Transocean last among deep-water drillers for “job quality” and second to last in

“overall satisfaction.” For three years before the merger, Transocean was the leader or near the top in both measures.” After Transocean’s merger with GlobalSantaFe, it seems as the company’s organizational culture took a turn for the worse.

In addition to safety and environmental violations in its offshore operations, Transocean is also responsible for numerous other international criminal violations. For example, they have been investigated for human rights violations in Myanmar. They have also reported conducting business in countries that sponsor terrorism including Syria and Iran. Moreover, the company is also under criminal investigation for tax fraud in Norway and is the target of tax inquires in the U.S. and Brazil (Meier 2010). Clearly, Transocean has demonstrated a pattern of criminogenic behavior that spans beyond the Deepwater Horizon.

Halliburton

Employing 80,000 people and operating in over 80 countries, Halliburton is one of the world’s largest provider of services and products to the oil and gas industry (Halliburton 2012). Halliburton is one of the top U.S. cementing companies for offshore oil drilling alongside Schlumberger and BJ Services. Less than 24 hours before the explosion on the Deepwater Horizon rig, Halliburton had completed cementing the Macondo well. Sealing a well with cement is one of the most dangerous procedures on a drilling rig. “A 2007 study by three U.S. Minerals Management Service officials found that cementing was a factor in 18 of 39 well blowouts in the Gulf of Mexico over a 14-year period. That was the single largest factor, ahead of equipment failure and pipe failure” (Gold and Casselman 2010).

The blowout of Macondo and the explosion of the Deepwater Horizon was not the first incident that had been linked to Halliburton’s poor cement job. In a strikingly similar situation in the Timor Sea, “Last year, Halliburton was also implicated for its

cementing work prior to a massive blowout off the coast of Australia, where a rig caught on fire and spewed hundreds of thousands of gallons into the sea for ten weeks” (Baram 2010). Moreover, Halliburton’s practice of adding nitrogen bubbles to its cement slurry (its signature special ingredient), has been identified as a contributing factor in other deepwater blowouts in addition to the Deepwater Horizon.

Just like BP and Transocean, Halliburton has also had a long history of international corruption and war profiteering, particularly related to the 2003 invasion and occupation of Iraq. The company had incredibly close ties to the Bush administration and received no bid contracts totaling billions of dollars for the reconstruction of the country. Furthermore, in 2010, the Nigerian government also filed corruption charges against Dick Cheney related to his duties as Halliburton’s CEO. Halliburton’s actions have also been addressed within the literatures on state-corporate criminality. For example, Rothe (2006) has identified war profiteering in the form of overcharging by Halliburton in Iraq as a form of state-facilitated corporate crime due to the government’s aggressive refusal to take regulatory action against the company. Rothe (2006:218) asserts, “As these examples show, Halliburton has a history of corporate criminality and questionable organizational practices.” Indeed, these deviant organizational practices persisted through the blowout of Macondo.

Conclusions

The collective corruption and mismanagement of BP, Transocean and Halliburton culminated into an unprecedented disaster on the Macondo well. Yet in the decades leading up the Deepwater Horizon blowout, each of these companies consistently demonstrated reckless, illegal and socially harmful behavior in numerous instances. Thus, it seems as though criminality is a persistent and pervasive part of BP, Transocean and Halliburton’s organizational cultures. Without any regulation or

oversight to place cautionary limits on drilling for oil in increasingly deeper waters, BP, Transocean and Halliburton tested, and crossed, the limits on the Macondo well.

While each of these companies must be scrutinized individually for their deviant actions, it must not obscure the fact that they operated in an industry which condoned, encouraged and rewarded risky behavior. Across the oil industry, massive restructuring that occurred during the late 1980s and 1990s allowed for declining oversight in the pursuit of increased profits. This trend of decentralization due to corporate mergers, amidst ongoing deregulation by government, cultivated the conditions that led to the blowout of Macondo. The explosion of Deepwater Horizon and the blowout of Macondo are not an aberration, but symptoms of a much larger problem inherent in the government and corporate relations comprising the offshore oil industry.

The organizational goals of BP under the leadership of CEO John Browne centered on rapid growth, decentralization and extensive cost cutting. Since managers were rewarded with bonuses when jobs were completed under budget and ahead of schedule, there was strong incentive to undertake illegal means to meet company goals. By making bonuses contingent upon reducing costs, managers at BP were motivated to ignore vital safety upgrades. This deviance became increasingly normalized as Browne's policies unfolded, ultimately resulting in numerous accidents including the Texas City disaster in 2005 and the Prudhoe Bay oil spills in 2006. During a time of rapid growth through mergers and acquisitions, policies which decentralized the organizational structure without corresponding oversight provided the opportunity for illegal means to develop within BP. Despite efforts to punish BP for its harmful actions, monumental fines imposed by government regulators were nevertheless insufficient to force compliance and prevent the blowout of Macondo.

CHAPTER FOUR: THE BLOWOUT OF MACONDO

The very real danger of an offshore well blowout has long been widely recognized by government and industry alike. The technical cause of the Macondo blowout was an unstable cement job coupled with the inability of the blowout preventer to seal the well. These failures were made possible by a series of calculated decisions by BP to rapidly finish the well while minimizing costs. A number of last minute changes to the well design made by BP and hastily approved by the MMS, helped to weaken the well and increased the likelihood of a blowout.

Blowouts in the Gulf of Mexico most often result from cementing the well, but despite this fact little has been done to reduce the hazards involved in this process. Rather, the MMS does not dictate guidelines for cement slurry mixtures, but instead defers to industry standards. During the cementing of the well, Halliburton ignored the results of failed tests that indicated the cement slurry was unstable. Once the blowout of Macondo did occur, the blowout preventer on the Deepwater Horizon failed to sever the rig from the well. Although managers from Transocean and BP had been made aware of problems with the blowout preventer in the weeks leading up to the disaster, this information was never reported to the MMS and no action was taken to address them. After the malfunction of the blowout preventer, the Deepwater Horizon crew had no choice but to abandon ship.

Following the explosion and evacuation of the rig, government and corporate officials began attempts to control the flow of information and images to the public at the expense of the surviving members of the Deepwater Horizon crew. Survivors from the explosion were forced to watch the rig burn and collapse with their missing comrades onboard. On the long journey back to shore, the survivors were

interrogated by officials from the Coast Guard, the MMS as well as lawyers from Transocean. The lawyers from Transocean coerced the crew members into signing waivers denying that they saw anything or sustained injury from the accident. Immediately upon reaching land at 1:27 a.m. on Earth Day, the exhausted and traumatized survivors were forced to submit to mandatory drug testing.

On the evening of the explosion and throughout the following day, Transocean imposed a communications blackout to prevent the spread of information about the accident. Across the Gulf of Mexico, crews on offshore rigs were prohibited from using the telephone or internet to contact friends and family. When the news finally made its way to land, the few carefully controlled images of the Deepwater Horizon engulfed in flames were provided to the public by the Coast Guard. This close control of information and images surrounding the spill by government and corporate officials established a trend that persisted for the duration of the response.

BP and the Macondo Well

BP paid more than \$34 million to the MMS in March 2008 for exclusive exploration and drilling rights for a nine square mile plot in the Gulf of Mexico known as Mississippi Canyon Block 252 (U.S. National Commission 2011:89). Fifty nautical miles off the Louisiana coastline, the location of the Macondo well is incredibly isolated, with only ocean for as far as the eye can see. Macondo's name came from the fictitious cursed town in Colombian Nobel Prize winning author Gabriel Garcia Marquez's novel *One Hundred Years of Solitude*. The first well to be drilled under the new lease, Macondo was initially planned to reach drilling depths of 20,200 feet, though the well only made it to 18,360 feet after encountering difficulties. Even at this depth, Transocean's Deepwater Horizon had set a new record in deepwater drilling for the Macondo well.

After purchasing the lease, BP became the legal operator of all activities on Block 252. While BP was primarily responsible for the well since it controlled a 65% share, Anadarko Petroleum Company (25%) and MOEX Offshore (10%) were also part owners and BP maintained regular contact with its partners throughout drilling operations (U.S. National Commission 2011:321). On the Deepwater Horizon, BP was responsible for overseeing the actions of a complex web of private contractors who perform nearly every stage of drilling. As the National Commission (2011:92) states:

But BP neither owned the rigs, nor operated them in the normal sense of the word. Rather, the company's Houston-based engineering team designed the well and specified in detail how it was to be drilled. A team of specialized contractors would then do the physical work of actually drilling the well—a common industry practice. Transocean, a leading owner of deepwater drilling rigs, would provide BP with a rig and the crew to run it. Two BP “Well Site Leaders” (the “company men”) would be on the rig at all times to direct the crew and contractors and their work, and would maintain regular contact with the BP engineers on shore.

The dynamically positioned mobile offshore drilling rig Deepwater Horizon was not the first rig to drill Macondo. Transocean's Marianas was the initial rig that began drilling in October 2009, reaching a total of 9,090 feet before being forced to stop 34 days later as Hurricane Ida approached. Although the Marianas had been moved off site to avoid the storm, it was nonetheless damaged enough to require replacement by the Deepwater Horizon which arrived on January 31, 2010 and began operations shortly thereafter. These and other events delayed drilling the well.

At the time of the explosion, the well was more than fifty days behind schedule, costing BP \$2 million a day and putting the project nearly \$100 million over budget and counting. On top of this, BP was shelling out \$500,000 in daily operating costs, in addition to another \$1 million in internal costs (Juhasz 2011:6). The delay of the well

and its growing expense weighed heavily on BP managers, as their bonuses were variably linked to completion timelines and budget targets. In the weeks leading up to the spill, company emails consistently debated strategies to save money, in every instance choosing the cheaper option. So great was the pressure from the “company men” leading up to the blowout that an entourage of top level BP and Transocean executives had arrived on the Deepwater Horizon the day of the disaster to push for a speedier completion of the Macondo well. Later that evening, the executives would be violently confronted with the results of their policies.

Causes of the Blowout

Blowout events are a regular occurrence in the Gulf of Mexico, though most happen in shallow waters less than 300 feet since most drilling occurs in this area. As drilling creeps into deeper waters, blowouts can be expected to take place in these locations as well. According to Juhasz (2011:11):

Gas kicks are routine. Even blowouts occur far more often than the industry would have us believe, and with increasing frequency. From 2005-2010, twenty-eight blowouts occurred in the Gulf of Mexico, four of which took place in the eighteen months preceding the blowout of the Macondo well. From 1999 to 2004, there were twenty blowouts, and from 1993 to 1998 there were just eleven.

The regularity of blowouts and the risks associated with cementing an oil well have been well documented by government and industry reports. According to the MMS, between 1992 and 2006 there were a total of 39 blowouts, or one for every 387 wells drilled during that period. All but one of these blowouts occurred in the Gulf of Mexico. This is a decline from 1971 to 1991 during which 87 blowouts occurred, or one in 246 wells drilled. Moreover, most of these blowouts occurred in water less than 500 feet with only 16% occurring in greater depths (Izon, Danenberger and Mayes 2007:84). While the frequency and severity of well blowouts has decreased more

recently, the MMS found that the percent of blowouts resulting from cementing operations has increased significantly. Out of the 39, cementing problems were responsible for 18 blowouts (Izon et al. 2007:88).

Aware of the potential for a deepwater blowout mostly likely to result from a poor cement job, BP in conjunction with Transocean and Halliburton disregarded every safeguard against such a disaster. According to the National Commission (2011:115):

The immediate cause of the Macondo blowout was a failure to contain hydrocarbon pressures in the well. Three things could have contained those pressures: the cement at the bottom of the well, the mud in the well and in the riser, and the blowout preventer. But mistakes and failures to appreciate risk compromised each of those potential barriers, steadily depriving the rig crew of safeguards until the blowout was inevitable and, at the very end, uncontrollable.

The last lines of defense against a blowout were systematically discarded as BP rushed to complete the well. Identifiable decisions were made by management at BP, Transocean and Halliburton concerning the use of drilling mud, the design of the well, the cementing process, and the maintenance of the blowout preventer, making an uncontrollable deepwater blowout inevitable.

Drilling Mud

In order to prevent oil and gas from escaping up the well, millions of gallons of “drilling mud” are pumped into the well which travels in a closed loop. At a pricey \$100 a barrel, drilling mud is a blend of synthetic chemicals, polymers and weighting agents that are used to lubricate and cool the drill bit, and maintain well pressure. The weight and density of the mud must constantly be monitored since low mud weight can result in a release of oil or gas into the well, known as a “kick.” On the other hand, mud that is too heavy can result in fracturing of the surrounding formations. Therefore a balance must be found between circulating enough mud to suppress the oil

and gas below, but not exerting too much pressure which could weaken the well, lead to a loss of circulation and increase the potential for a blowout below the seabed floor.

An initial problem encountered by the Macondo team was a “lost circulation” event on April 9, 2010, meaning that drilling mud began flowing into cracks in the formation rather than back up to the rig therefore resulting in lost returns. As a result, drilling was halted. Engineers realized that they had “run out of drilling margin,” and continuing to bore any deeper would further jeopardize the stability of the rock formations. Therefore, drilling was prematurely ceased at 18,360 feet (U.S. National Commission 2011:94). From this point on as cementing operations began, one of the greatest concerns of BP’s team was the pressure placed on the fragile rock formations and the risk of a subsea well blowout.

Changes to the Well Design

After examining the well, BP concluded that there were sufficient reserves to economically justify inserting final production casing string which would allow the company to recover oil and gas upon future return. Once the casing was in place, Halliburton would close the well by filling the casing with a specialized cement blend. The primary cement job is the first attempt which must seal off (or “isolate”) the hydrocarbon-bearing zone from the space surrounding the casing and from the inside of the casing itself (U.S. National Commission 2011:95).

BP made numerous changes to the well design that were not adequately reviewed internally or by the MMS. Five days prior to the incident, BP had made three changes to its planned well design in a span of only 24 hours; all of which were rapidly approved by the Department of Interior, in some cases within minutes of the request. Alterations such as the decision to use a long string casing, which increased the potential for a weak seal along the casing walls, had been questioned by engineers at

BP (Hammer 2010). Nonetheless, continuing to push the project towards completion in the quickest, easiest manner, BP management elected to use the easier long string design. BP also decided at the last minute to use fewer centralizers inside the casing, further weakening the well's design. Taken together, these hasty changes to the well design increased the likelihood of a blowout.

During the cementing process, BP decided to use a lighter, though less stable, cement slurry mix containing nitrogen bubbles in an effort to reduce the amount of pressure on the well. Moreover, BP opted to use less cement and to circulate it at a slower rate than what is considered safe industry practice to protect against a blowout. Furthermore, the cement used by Halliburton failed multiple tests, suggesting that it lacked integrity. Finally, once the cementing process was complete, it failed numerous critical tests indicating that the well not properly sealed. Ultimately these signs were dismissed, ignored and unrecognized by BP, Halliburton and Transocean.

Long string casing design

Initially, BP's design team planned to use a "long string" production casing, "...a single continuous wall of steel between the wellhead on the seafloor, and the oil and gas zone at the bottom of the well" (U.S. National Commission 2011:95). This design allowed for easier access for future production operations. After the lost circulation event, a "liner," was selected since it would be easier to cement into place. A liner is "...a shorter string of casing hung lower in the well and anchored to the next higher string. A liner would result in a more complex- and theoretically more leak-prone- system over the life of the well" (2011:95). However, there was disagreement between engineers at BP and Halliburton on which design to use. According to the National Commission (2011:95-6):

On April 14 and 15, BP's engineers, working with a Halliburton engineer, used sophisticated computer programs to model the likely

outcome of the cementing process. When early results suggested the long string could not be cemented reliably, BP's design team switched to a liner. But that shift met resistance within BP. The engineers were encouraged to engage an in-house BP cementing expert to review Halliburton's recommendations. That BP expert determined that certain inputs should be corrected. Calculations with the new inputs showed that a long string could be cemented properly. The BP engineers accordingly decided that installing a long string was "*again* the primary option."

After pressure from BP management, the decision was made to go with the original long string plan, despite concerns raised by engineers at Halliburton and BP.

Fewer centralizers

In the original designs, BP intended to install 16 centralizers along the long string, which are designed to secure sections of casing together. Yet on April 1, 2010, BP's supplier, Weatherford, had only six "sub" centralizers available (which screwed in place), with the only other alternative being "slip-on" centralizers (placed over the casing) which the BP team refused to use. BP had an aversion to using slip on centralizers, fearing other equipment might get caught on them.

Using sophisticated software designed to model the likely outcome of the cement job, Halliburton engineer Jesse Gagliano calculated that more than six centralizers would be needed to prevent against channeling. By his estimations, 21 centralizers would need to be in place (U.S. National Commission 2011:96-7).

According to the National Commission (2011:97):

Gagliano told BP engineers Mark Hafle and Brett Cocalas about the problem on the afternoon of April 15. With de facto leader John Guide out of the office, Gregory Walz, the BP Drilling Engineering Team Leader, obtained permission from senior manager David Sims to order 15 additional slip-on centralizers—the most BP could transport immediately in a helicopter. That evening, Gagliano reran his simulations and found that channeling due to gas flow would be less severe with 21 centralizers in place. Late that night, Walz sent an e-mail to Guide explaining that he and Sims felt that BP needed to "honor the

[OptiCem] modeling to be consistent with our previous decisions to go with the long string.”

When senior BP official John Guide returned the next day, he resisted the change and argued that they were not custom made as specified. However, it seems as though Guide’s decision to go with fewer centralizers seems to be motivated more by economic factors since the last minute addition of 45 pieces of equipment would add ten more hours to the job (U.S. National Commission 2011:97). Even once the final decision was made, BP did not communicate this change in design to Halliburton. The National Commission (2011:116) notes:

BP did not inform Halliburton of the number of centralizers it eventually used, let alone request new modeling to predict the impact of using only six centralizers. Halliburton happened to find out that BP had run only six centralizers when one of its cement engineers overheard a discussion on the rig.

In the end, BP installed only six centralizer subs in the long string casing, which was installed in its final position on April 19, 2012. Using fewer centralizers is yet another decision made by BP to save time and money that contributed to the destabilization of the well.

Cementing the Well

BP made a number of critical decisions that placed constraints on Halliburton’s cementing design. One compromise made by BP was the decision to limit the amount of drilling mud circulated before cementing. Extensive circulation helps ensure against channeling, whereby oil and gas can escape up through bubbles that form channels up through the well and destabilize the cement job. Ideally, enough drilling mud is used to circulate the mud “bottoms up,” meaning the well continues to be filled with drilling mud until it reaches the bottom and the returns back up to the top. However, pumping more mud requires more time, and the BP team feared another lost returns event

caused by applying too much pressure. “Accordingly, BP circulated approximately 350 barrels of mud before cementing, rather than the 2,760 barrels needed to do a full bottoms up circulation” (U.S. National Commission 2011:100).

Also in an effort to reduce the amount of pressure placed on the well to avoid a lost returns event, BP instructed Halliburton to use less cement and to pump it a lower rate. Yet pumping greater amounts of cement at higher rates is standard industry practice to protect against uncertain cementing conditions. “As designed, BP would have Halliburton pump a total of approximately 60 barrels of cement down the well- a volume that its own engineers recognized would provide little margin for error” (U.S. National Commission 2011:100). Finally, in consultation with Halliburton, BP opted to use lighter cement formula which injects nitrogen bubbles into the cement slurry just before pumping it into the well (2011:100). Adding nitrogen to the mix was intended to make the cement lighter and more elastic.

Failed cement tests ignored

The type of cement that is used and its composition is not regulated by the MMS, but operators are urged to consult the standards put forth by the American Petroleum Institute. Ultimately, the oil and gas companies make the final decision on cement. Before it can be used, cement slurry must be tested since its composition and stability can change depending on rig conditions and how it is stored. Halliburton performed initial analysis on the cement slurry it planned to use on the Macondo well on February 10, 2010. The test results, which were provided to BP, revealed that the foam slurry design was unstable, though it does not appear that this information was ever acknowledged.

Upon further testing, Halliburton continued to identify the cement slurry as unstable, though it is not clear that this information was provided to BP. According to the National Commission (2011:101):

Documents identified after the blowout reveal that Halliburton personnel had also conducted another foam stability test earlier in February. The earlier test had been conducted under slightly different conditions than the later one and had failed more severely. It appears that Halliburton never reported the results of the earlier February test to BP.

In mid-April just before pumping began, Halliburton conducted yet another test after BP had provided more accurate information about the well conditions. Just like the two tests performed in February, this test also showed that the cement slurry would be unstable, though it does not appear that this information was reported to BP. According to Halliburton, this test was performed improperly by its lab personnel, though it has not provided sufficient evidence to back this claim. Nonetheless, “This should have prompted Halliburton to review the Macondo slurry design *immediately*, especially given how little time remained before the cement was to be pumped” (U.S. National Commission 2011:117). Halliburton performed a second test on April 18, which was stopped short of the intended 48 hour duration and appeared to indicate cement stability.

Although the second test at least arguably suggests the foam cement design used at Macondo would be stable, it is unclear whether Halliburton had results from that test in hand before it pumped the job. Halliburton did not send the results of the final test to BP until April 26, six days after the blowout. (U.S. National Commission 2011:102)

This strongly suggests that at the time Halliburton approved the use of the cement slurry that tests results had not yet been made available. The results of the tests and thus the stability of the cement slurry were therefore questionable. Halliburton and the Transocean crew finished pumping the primary cement job on April 20 at 12:40 a.m.

and the amount of oil flowing back reduced to a trickle. By 5:45 a.m. that morning, Halliburton, Transocean and BP were all quick to claim success for completing the cement job (2011:102).

Negative pressure test

After cementing the well, the crew began to prepare for temporary abandonment of Macondo. Prior to temporary abandonment, MMS requires that a positive-pressure test which, among other things, evaluates the ability of the casing in the well to hold in pressure. In addition to the positive pressure test, a negative pressure test also was completed. The negative-pressure test checks both the integrity of the casing and the integrity of the bottomhole cement job.

One of the major contributing factors to the blowout was an inability to properly conduct and interpret the negative pressure tests. The negative pressure test ensures that no oil or gas is flowing up through the cement. At the time, there were no MMS regulations or written protocols for how to undertake negative pressure tests, and BP was not required to do so. Moreover, neither BP nor Transocean had any standard procedures for the tests and did not train their Well Site Leaders at Macondo, or other personnel, how to perform them. As the National Commission (2011:119) found, employees at BP and Transocean did not appreciate the importance of the negative pressure test and the potential for a breach in well integrity. As a result, the negative tests were premature and conducted hastily. Juhasz (2011:22) explains:

There were several problems with the test that they were performing. It was the second negative test that day; both tests were premature, adding to the already unstable well. The foamed cement used by Halliburton required forty-eight hours to strongly solidify. Nonetheless, the first negative test was performed just sixteen and a half hours later, and the second test was just twenty-one hours later.

Conducting the tests so close together further helped to destabilize the well, setting the stage for the explosion.

At 5:00 p.m. the crew began the test by running the drill pipe down below sea level and pumping a “spacer,” a liquid mixture that separates the heavy drilling mud from the seawater. Seawater is then pumped to displace the mud from below the mudline to above the blowout preventer. The manner in which BP chose to go about its spacers for its negative pressure test was novel, the National Commission notes. In an attempt to avoid having to properly dispose of hazardous waste onshore, BP incorporated them into its spacers. As the National Commission (2011:106) found:

BP had directed M-I SWACO mud engineers on the rig to create a spacer out of two different lost-circulation materials left over on the rig—the heavy, viscous drilling fluids used to patch fractures in the formation when the crew experiences lost returns. M-I SWACO had previously mixed two different unused batches, or “pills,” of lost-circulation materials in case there were further lost returns. BP wanted to use these materials as spacer in order to avoid having to dispose of them onshore as hazardous waste pursuant to the Resource and Conservation Recovery Act, exploiting an exception that allows companies to dump water based “drilling fluids” overboard if they have been circulated down through a well. At BP’s direction, M-I SWACO combined the materials to create an unusually large volume of spacer that had never previously been used by anyone on the rig or by BP as a spacer, nor been thoroughly tested for that purpose.

Combining two spacers at once in an effort to save money created an abnormally large volume of liquid which may have distorted the pressure test readings. It must be stressed that a method such as this had never before been used or tested as a spacer, and it is possible that it may have clogged the kill line (2011:119). Because of all these anomalies, the Transocean crew should have been particularly on the look out for abnormal pressure readings.

After displacing the mud, the well needed to be shut in and the pressure brought down to zero under close observation. Try as they might, the crew was unable

to bring the pressure to zero after shutting in the drill pipe, even after multiple attempts. “Nevertheless, at 8 p.m., BP Well Site Leaders, in consultation with the crew, made a key error and mistakenly concluded the second negative test procedure had confirmed the well’s integrity. They declared the test a success and moved on to the next step in temporary abandonment” (U.S. National Commission 2011:109).

Cement bond log test canceled

Even under normal conditions, a negative pressure test is very important in cementing a well. So confident was BP in the cement job, that at 7:30 a.m. it canceled evaluations by a team of technicians from the oil service contractor Schlumberger that had been standing by for more than a day to perform the final and most reliable cement evaluation tests on Halliburton’s primary cement job known as a cement bond log (U.S. National Commission 2011:102). “By sending Schlumberger’s cement evaluation team back to shore, BP chose to rely entirely on the negative-pressure test to directly evaluate the integrity of the primary cement at Macondo” (2011:118). The cement bond log is considered the “gold standard” in testing cement jobs and it is not entirely clear why BP choose to cancel the test unexpectedly at the last minute.

According to Juhasz (2011), there are competing accounts to explain why rather than complete the test the Schlumberger employees left the rig on an unscheduled flight at 11 a.m. on April 20, 2010. One explanation purported by BP in testimony and internal analysis is that its executives opted not to do the test and therefore sent the employees home. Some argue that this was done in an effort to save time and money, especially if the test were to have found problems. The test itself would have cost BP at least \$100,000 and discovering problems like an uneven cement job could cost an additional \$30 million (Juhasz 2011:20).

Other accounts, however, suggest that Schlumberger had performed the test which indicated that gas was leaking through the cement. After the technician informed BP that the well needed to be killed, the BP manager in charge refused. The Schlumberger employee then called his supervisor to be sent an unscheduled helicopter to leave the rig as soon as possible (Juhasz 2011:19-20). As Juhasz (2011: 21) concludes, “Had the Schlumberger crew stayed on the *Deepwater Horizon* to run the test, they would surely have found that Halliburton’s cement job was faulty; the findings of the negative tests performed later that day by the drill team, which showed the well to be stable, were wrong...” These conflicting accounts are difficult to reconcile since the National Commission neglected to interview any employees from Schlumberger about the incident. Nonetheless, it is clear that by canceling the cement bond log test and sending the Schlumberger crew back to land, BP saved both time and money, if not the discovery of an unstable cement well.

The Explosions

After what was interpreted as a successful negative-pressure test, the crew then began to monitor the well for “kicks” (unplanned influxes of gas or fluids) while they prepared to set the surface cement plug. Everything was going smoothly and the drilling pipe pressure was steadily decreasing as seawater displaced the heavy drilling mud in the riser. Going unnoticed by the crew, at 9:01 p.m. drilling pressure began to unexpectedly increase, possibly resulting from hydrocarbons plowing up past the heavy drilling mud. It was not until around 9:30 p.m. that the crew noticed a “differential pressure” between the drilling pipe and the kill line, and therefore shut off the pumps to investigate. Although it appeared increasingly likely that the well was experiencing a kick, the well was never shut in. When drilling mud began spewing

back onto the rig floor between 9:40 and 9:43 p.m., only then did the crew realize that a kick had occurred (U.S. National Commission 2011:111-3).

The crew responded with immediate action by rerouting the mud flowing back up into the mud-gas separator rather than overboard into the sea. At 9:41 p.m. they then closed one of the annular preventers on the blowout preventer in an attempt to shut in the well. Despite their best efforts, flow back quickly overwhelmed the system and set the stage for ignition and explosion, the first of which occurred at 9:49 p.m.

According to BP's internal investigation, the computer had registered gas flowing into the well much earlier while the crew was running the negative pressure test. Yet no one on the rig was aware of this danger since the automatic gas alarms had intentionally been inhibited. The system had been set to record information but not to trigger alarms, running the risk of inconveniently waking the crew up in the early hours of the morning due to false alerts. Furthermore, the inhibited automatic gas alarm was not specific to the Deepwater Horizon but had been made standard on the whole Transocean fleet. As a result, the automatic shutdowns which would have contained the gas did not occur (Juhasz 2011:24). Normally, BP's onshore operations center might have been alerted to the changes in pressure as the oil and gas forced its way out. Yet the outsourced onshore alert system only functioned between traditional business hours and were not available to alert the crew of the immediate danger (Bergin 2011:156).

Executives visiting Deepwater Horizon

The VIP executives touring the bridge were similarly unaware of the disaster unfolding on the deck of the rig. On the day of the disaster, four executives from Houston were onboard for a 24 hour "management visibility tour" (U.S. National Commission 2011:5). Led by Transocean Offshore Installation Manager Jimmy

Harrell, executives from BP and Transocean were on board to celebrate the Deepwater Horizon being the first rig to go seven years without a “lost-time accident.” The trip was not only celebratory as senior level officials (whose bonuses depended on saving money and making deadlines) had come to the rig to put pressure on the crew to complete the overdue well (Juhasz 2011:5-6).

BP’s vice president for drilling and completions for the entire Gulf of Mexico Patrick O’Bryan, who had never before been on an offshore rig, along with managers for performance from both BP and Transocean had spent the afternoon and evening on a tour of the rig led by Captain Curt Kutcha. Around 9 p.m. the executives were escorted to the bridge to show off the impressive technology on the Deepwater Horizon. Described as “basically playing a video game,” they were allowed to use a joystick computer station which imitates steering the entire rig (Juhasz 2011:6).

We can only imagine the thrill for the visiting executives who got to ‘steer’ the rig. They even tried to intensify the experience by simulating increasingly rough conditions. “We loaded into the simulator about 70-knot winds and 30-foot seas and two thrusters down and then you switch into the manual mode and see if the individuals can maintain the rig on locations,” explained visiting Transocean executive Daun Winslow, the operations manager-performance for the North American division. For the BP president O’Bryan, the ‘newbie’ on the rig, “we loaded up with the most environment,” Winslow said. (Juhasz 2011:8)

Just as O’Bryan took his turn on the simulator things suddenly got all too real. The rig began to violently shake, followed by a hissing sound and the first explosion. The first explosion occurred at 9:49 p.m., taking out the power on the rig and disabling the communication systems. It was then quickly followed by a second explosion ten seconds later.

With the visiting executives adding to the commotion on the bridge, the bridge crew was slow to take immediate action following the explosions. At 9:47 p.m. Andrea Fleytas (one of only three women on the entire crew) manually activated the

rig's general alarm and then activated the distress button alerting the Coast Guard at 9:53 p.m. Although Fleytas' distress call was the only call for help from the Deepwater Horizon, she was immediately reprimanded by Captain Kutcha for acting without his authority. In the confusion the crew had also neglected to activate the Emergency Disconnect System (EDS). Once activated, the EDS is designed to trigger the blind shear ram, freeing the rig from the riser. After receiving proper permission from Transocean OIM Jimmy Harrell, records indicate that the crew activated the EDS at 9:56 p.m., but nothing happened (Juhasz 2011:31-2; U.S. National Commission 2011:13-4).

Failure of the Blowout Preventer

The blowout preventer (BOP) is the last line of defense against an uncontrolled well event and managers at BP and Transocean put all their trust into this technology. Concerned about the final plans for cementing Macondo, Jimmy Harrell, the top Transocean executive on the rig, affirmed the crew's faith in the blind shear ram when he stated, "Well, I guess that's what we have those pinchers for" (Hammer 2010).

The BOP on the Deepwater Horizon was manufactured and designed by Cameron International, but was owned, operated and maintained by Transocean. Standing over five stories high, the BOP is an emergency safety device that is bolted to the seabed floor. In the event of a blowout, or an uncontrolled discharge from the well, the Deepwater Horizon's BOP was designed to seal in a number of ways. As the National Commission (2011:93) explains:

The top two were large, donut-shaped rubber elements called "annular preventers" that encircled drill pipe or casing inside the BOP. When squeezed shut, they sealed off the annular space around the drill pipe. The BOP also contained five sets of metal rams. The "blind shear ram" was designed to cut through drill pipe inside the BOP to seal off the well in emergency situations. It could be activated manually by drillers

on the rig, by an ROV, or by an automated emergency “deadman system.” A casing shear ram was designed to cut through casing; and three sets of pipe rams were in place to close off the space around the drill pipe.

Moreover, the BOP is capable of maintaining enough hydraulic pressure to fully close all valves one time even in the event of power loss to the rig.

As a very last means of defense, the emergency backup deadman system is a battery powered automatic mode function device that is supposed to activate the blind shear rams to close the well. Yet on the Deepwater Horizon the deadman switch failed to initiate the BOP. As cited in Juhasz (2011:34):

According to BP’s internal investigation, ‘insufficient charge was discovered on the 27-volt AMF battery bank in the blue pod, and a failed solenoid valve 103 was discovered in the yellow pod.’ In other words, the batteries had been allowed to run down.

The failures of the BOP had all come down to a failed valve and a low battery.

Although some BOPs can be remotely accessed through an acoustic switch, federal regulations do not mandate them and the Deepwater Horizon did not have a remote trigger. Since 2000, the MMS had considered requiring operators to install the costly acoustic triggers but had decided against it following industry pressure (Gold, Casselman and Chazan 2010). BP continued attempts to activate the BOP through remotely operated vehicles into the night and for days after the explosion, but to no avail.

The Department of Interior hired the Norwegian company Det Norske Veritas to conduct a forensic investigation of the Deepwater Horizon’s failed BOP. The report found that the extremely high pressure of oil and gas shooting up through a 5.5 inch drill pipe caused it to bend and knocking it off center from the middle of the BOP. Because the pipe was not centered, the BOP was unable to use its blind shear rams to seal the pipe. The report attributed the failure to a flaw in the design of the BOP, not

to poor maintenance of the device, therefore placing the blame on the manufacturer. Cameron International argued that the BOP was built to industry standards and was not designed to withstand such extreme emergency conditions such as a pipe becoming off center.

The failures of the BOP on the Deepwater Horizon should not have come as a surprise. As recognized by industry and government studies, blind shear rams are quite vulnerable and the failure of a single part can disable the whole system. Examining 15,000 wells drilled off North America and the North Sea between 1980 and 2006, Det Norske Veritas identified 11 instances of well blowout in which the BOP was activated. Only in six cases was the well brought under control; a failure rate of 45 percent (Barstow, Dodd, Glanz, Saul and Urbina 2010).

A recurrent reason for the failure often involved the blind shear rams which slice the pipe. Commissioned by the MMS, two studies conducted in 2002 and 2004 by West Engineering Services found that even when the shear rams did work, they often still were unable to cut the pipe. It was revealed that only three of 14 newly built rigs had BOPs that could squeeze off and cut the pipe at the water pressure likely to be experienced at the equipment's maximum water depth. The report specifically mentioned Cameron International for using calculations to determine shear ram strength that were lower than required (West Engineering Services 2004). Despite these findings, the MMS never revised its BOP regulations or required any action from industry.

Privileging profit over safety, the oil industry has consistently fought against mandatory testing of blowout preventers. In 2010, BP and other companies funded a study that argued that pressure tests be conducted every 35 days, rather than more frequent testing every 14 days as was mandated. The study found that such a change

could save an estimated \$193 million a year in lost productivity. At a costly \$700 per minute to stop operations and pull up the BOP for repairs, the decision to prolong, delay and neglect maintenance operations saves companies millions of dollars (Barstow et al. 2010).

Indeed, BP and Transocean had neglected to service the BOP on the Deepwater Horizon even though the problems had been reported in the BP Daily Operations Reports as early as March 10, 2010. Federal regulations require that operations be suspended and the BOP raised for examination if problems are identified. However, BP and Transocean officials had been alerted that the BOP was not functioning properly due to a hydraulic leak in the yellow control pod and no action was taken. BP's team leader on the rig John Guide testified that he had been told of the leak, but failed to report this information to the MMS. Moreover, chief electronics technicians Mike Williams had reported that the annular on the BOP was also damaged just weeks before the blowout (Juhasz 2011:33-4). Although crew members had brought the problems with the BOP to the attention of their superiors, management at BP and Transocean neglected to report this information to government regulators or take any action to remedy the issues.

Evacuation and Initial Response

Once the Emergency Disconnect System failed to activate the blowout preventer and sever the riser from the rig, there was nothing left for the crew to do but abandon ship. As explosions on the rig continued, the evacuation was chaotic and the traditionally rigid chain of command on the Deepwater Horizon fell apart. Not even Captain Kuchta maintained control of the evacuation, as he had abandoned ship before the crew was off the rig. The crew struggled to properly launch the lifeboats and ten

people opted to take the dangerous leap 100 feet from the rig into the dark, cold ocean below.

Waiting nearby to collect mud from the Deepwater Horizon to use on another BP well, the Damon B. Bankston rescued the 115 surviving crew members from the waters (Juhasz 2011:35). The first Coast Guard responders arrived by helicopter on the scene at 11:22 p.m. to begin evacuating the sixteen injured crew members. By 11:30, managers took a final count of the crew members on board the Bankston only to discover that eleven men were unaccounted for: Jason Anderson, Dale Burkeen, Donald Clark, Stephen Curtis, Roy Kemp, Gordon Jones, Karl Dale Kleppinger, Blair Manuel, Dewey Revette, Shane Roshto and Adam Weise (U.S. National Commission 2011:17).

Haphazard Firefighting Efforts

With the rig still attached to the uncontrollable well, it was nearly impossible to quell the fire on the Deepwater Horizon. But until firefighting efforts began, the rig did not appear in danger of sinking. Just like the evacuation, firefighting efforts were impromptu, and no one took control. While Coast Guard boats soon arrived on the scene, their regulations prohibited them from leading firefighting efforts unless it is in assistance of a regular firefighting agency. Instead, firefighting duties were the responsibility of the rig owner and operators: BP and Transocean. Lacking planning and preparation, the attempts to put out the rig were conducted by four to six private Good Samaritan boats that were in the area. The ships began spraying an estimated 6,000 gallons of saltwater, which unintentionally contributed to the sinking of the rig by flooding Deepwater Horizon's buoyancy chambers with thousands of pounds of water (Mehta and Solomon 2010). The Coast Guard's investigation of the explosion, fire, and sinking of the rig, found that the agency failed to follow its own firefighting

policy. Moreover, the report identified the unsupervised application of tons of salt water by private boats as a contributing factor to the collapse of the Deepwater Horizon (U.S. Coast Guard 2010). The collapsed rig caused multiple kinks in the pipe tethering the riser to the well that began leaking oil at an alarming rate.

Treatment of Survivors

Once they were rescued by the Bankston, the surviving crew members were forced to wait for twelve hours on board as they watched the rig- which for many had been their home for over eight years- burn, twist and then topple into the ocean.

Sitting there hour after hour watching the conflagration with all its cascading smaller explosions was “one of the most painful things we could have ever done,” said Randy Ezell. “To stay on location and watch the rig burn. Those guys that were on there were our family. It would be like seeing your children or your brothers or sisters perish in that manner. And that- that put some mental scarring in a lot of people’s heads that will never go away. I wish that we could, to the bare minimum, have moved away from the location or something where we didn’t just have to sit there and review that many hours. That was extremely painful.” (U.S. National Commission 2011:18-9)

Finally, at 8:13 the next morning the Bankston was finally given permission to return to shore with the surviving crew members. But before they could return, at the direction of the Coast Guard a stop was made at the Matterhorn drilling rig at 2:09 p.m. to pick up supplies (tobacco, water and coveralls) in addition to government investigators. Juhasz (2011:48) states:

Investigators from the Coast Guard and the Interior Department were waiting there to board the *Bankston*, but the crew was forced to wait an extra forty five minutes for the lawyers from Tidewater, the corporate parent of Transocean, to arrive. With all the investigators and lawyers finally on board, the *Bankston* took off for the remaining nine-and-a-half hour ride home to Fourchon, Louisiana. En route, the government investigators questioned some of the crew and had all fill out written statements.

As if interrogation was not enough, when the vessel finally arrived to shore at 1:27 a.m. on Earth Day, the traumatized crew members were welcomed by security guards and portable toilet where mandatory drug tests were administered, per standard Coast Guard procedure for all serious marine incidents resulting in damage more than \$100,000 or death. The search for the cause of the disaster was to begin with the crew members (Urbina and Gillis 2010).

The crew members were then transported by private buses and escorted in the back entrance of a hotel to finally be reunited with their families. But before they could make contact, they were pressured to sign a statement by lawyers from Transocean alleviating the company of responsibility (Shapiro 2010b).

The statement was a form letter. The crew members were to fill in the date, their names and addresses, and there they were at the time the evacuation was ordered. Two sentences at the end read “I was not a witness to the incident requiring the evacuation and have no firsthand or personal knowledge regarding the incident” and “I was not injured as a result of the incident or evacuation.” The crew was asked- if they agreed- to initial those statements. (Juhasz 2011:48)

Exhausted, traumatized and wanting to be reunited with their loved ones, the crew members signed the statement. Currently, these signed statements are being used by Transocean’s lawyers against crew members seeking emotional distress and other claims in court (Shapiro 2010a).

Initial Images of Deepwater Horizon

First on the scene to begin documenting the official account of the explosion was the Coast Guard. “Within days, everyone across the country saw the same images. The photos were taken by the coast guard, provided to media outlets, and quickly seared into our collective psyche” (Juhasz 2011:43). The isolated location of the rig helped to contain the spread of images to the public, but within hours nearby rigs in

the Gulf of Mexico had heard word, or could visually see the flames of the fire on the horizon.

Quickly identified as a BP oil rig, the images went global. Even for people accustomed to seeing things explode on television, it was a shocking sight. Perhaps it was the isolation of the event: no cityscape, no people we could see, and, in most cases, no sound. The comparisons most commonly made were to outer space, including the explosion of the space shuttle *Challenger*. (Juhasz 2011:43)

The unfolding disaster came to be defined by the carefully controlled images provided by the Coast Guard of the rig engulfed in flames. A lack of people, background and sound, imbued the visual images with an additional layer of significance. Moreover, the isolated location in which the incident took place greatly shaped the subsequent response. The setting of the explosion and spill therefore allowed for greater control over the crime scene, including the ability to limit access to officials, the media and the public. Just as quickly as the evacuation had occurred, the clampdown on communication began.

Communications Blackout on Rigs in the Gulf of Mexico

After the explosions, a communications blackout took effect in the early hours of April 21 and lasted for over thirty hours. The ban prohibited both phone and internet contact with others onshore and applied to all Transocean rigs in the Gulf of Mexico. According to Juhasz (2011:47), particularly for those crew members on other rigs in the Gulf that night:

The Internet ban was the worse of the two. Most rigs come equipped with just two satellite telephones. This, and perhaps the relative youth of the crew, explains why Facebook is their dominant mode of communication with friends and family on shore. The blackout meant no communication other than the wave of rumors coming across the television...

The Gulf-wide ban was partially lifted at 7 a.m. on April 22, when phones were allowed to be used, though internet use continued to be prohibited.

Despite all of the tragedy experienced by the surviving crew members of the Deepwater Horizon, they were forbidden to contact their families "...until there was more definitive information" (U.S. National Commission 2011:17). It is uncertain whether the ban on communication was issued by the Coast Guard or Transocean, but in either case, it applied to all Transocean rigs in the Gulf of Mexico and was supported by the Coast Guard. Transocean justified the ban by stating it was trying to contain rumors while determining the missing crew members. However, others on board thought that the blackout might be an attempt by the corporations involved to control information and get their stories straight before it spread to the public (Juhasz 2011:46). In any event, Transocean was successful in limiting images and information about the Deepwater Horizon from reaching shore.

Conclusions

Within the offshore oil drilling industry, both government and corporations alike have recognized the potential for a serious deepwater blowout. Privileging profits over safety, the offshore industry has fought against the federal regulation and implementation of safety devices due to increased costs. Despite being the leading cause of deepwater blowouts, there was no federal regulation to direct the cementing process or test the integrity of the cement job. Thus, there were few barriers in place to protect against an uncontrolled deepwater blowout.

On the Deepwater Horizon rig, the BP's overarching goal was to quickly finish the overdue well while saving money. In pursuit of this organizational goal, BP made numerous critical decisions that weakened the stability of the well and helped to ensure that a blowout would occur. First, BP elected to use less drilling mud before

cementing when using more is standard industry practice to prevent against blowout. Second, the company decided to use a long string casing design when alternative would have been safer. Third, BP used six compared to the recommended twenty one centralizers. Fourth, BP opted to use an untested hazardous mixture for spacers in the cementing process to avoid the cost of disposal onshore. Finally, in order to save time, money and avoid the discovery of a costly failed cement job, at the last minute BP made the decision to cancel the cement bond long test, which is considered the “gold standard” of well integrity tests. Rapidly reviewed and approved by regulators at the MMS, each of these decisions increased the risk of a deepwater blowout, and pushed the well closer to a blowout.

BP’s risky decisions placed constraints on both Transocean and Halliburton, who did little to resist the changes despite the danger posed. Pressure from BP management to finish the job rapidly provided the opportunity for illegal means to be undertaken at Transocean and Halliburton as well. Halliburton ignored the results of failed tests suggesting the slurry was unstable and failed to report this information to BP. Moreover, BP, Transocean and Halliburton were all quick declare the cement job a success and to ignore the questionable negative pressure test results indicating the well was unstable. Furthermore, despite known problems with the blowout preventer, management at neither BP nor Transocean undertook the costly effort of halting operations and fixing the BOP, as required by federal law. The normalization of deviant practices had therefore spanned beyond BP’s organizational culture and had come to affect the interorganizational operations on board the Deepwater Horizon. In the end, lax federal regulation and the normalization of deviance on the rig allowed something as simple as a loss of hydraulic pressure and a low battery on the BOP to seal the fate of the Deepwater Horizon.

In the immediate aftermath of the explosions, government and corporate officials sought to control the flow of information and images about the Deepwater Horizon explosion at the expense and mistreatment of the surviving crew members. Following their rescue by a nearby servicing boat, the survivors were forced to watch the rig burn, and then topple into the Gulf with their missing comrades on board. Although the Coast Guard is not legally responsible for leading firefighting efforts, an investigation into the disaster identified haphazard firefighting efforts as a contributing factor to the collapse of rig and the unleashing of Macondo. Before heading back to shore to be reunited with their families, the survivors were interrogated by officials from the MMS and the Coast Guard, and were pressured to sign waivers of liability by lawyers from Transocean. As if the exhausted crew had not suffered enough, immediately upon returning to shore they were welcomed by security guards administering mandatory drug testing. Close handling of survivors of the explosion by government and corporate officials helped contain the flow of unauthorized information from spreading while a unified story of the disaster could be established. In the wake of the explosion, Transocean issued a communications blackout prohibiting telephone or internet use for rigs throughout the Gulf of Mexico. The ban on communications provided an opportunity for Transocean, BP, the MMS and the Coast Guard to carefully coordinate information and images of the Deepwater Horizon before it reached the public, a trend that continued throughout the response to the spill.

SECTION III: STATE-CORPORATE RESPONSE TO THE SPILL

CHAPTER FIVE: OVERVIEW AND STRUCTURE OF THE STATE-CORPORATE RESPONSE

The response to the 2010 Gulf of Mexico oil spill is best characterized as a state-facilitated corporate cover up. Hiding the extent of the environmental devastation was a major task of the response efforts. The federal government worked as co-combatants with BP in the fight to contain the Macondo well, hide the oil and prevent public visibility of the spill's effects. While BP and the government may have been working together to contain the spill, BP was clearly calling the shots. The predominance of privately contracted oil spill response organizations hired by BP made them beholden to the company's direction. As with most aspects of the response, BP was funding operations therefore giving them de facto operational control. The overrepresentation of vulnerable populations such as unemployed persons, racial minorities and inmate labor in the most hazardous cleanup jobs outsourced through a web of private contractors and subcontractors, further contributed to BP's ability to censor its operations.

The response to the Gulf of Mexico spill involved an unprecedented mobilization of people and resources involving federal, state and local governments in coordination a massive army of privately contracted oil spill response organizations (OSROs) hired by BP. Regulated by the Oil Spill Pollution Act of 1990 (OPA) and the National Contingency Plan, this complicated organizational structure of response is mutually dependent on the success of government and private efforts alike as "co-combatants" in the fight against the spill. Federal responders struggled with the

demands for information from officials, media and the public. In an effort to achieve a “whole of government” united response message, lower levels within the federal structure were prohibited from communicating with the media unless it had first been reviewed and approved by the White House and the Department of Homeland Security. Furthermore, to meet its obligations under the Oil Spill Pollution Act BP relied heavily on contractors and subcontractors which worked alongside federal responders. Such an extensive network of private forces with an array of technical expertise made it difficult for federal responders to exert effective supervision and control. Finally, during the 152 days which BP and the government attempted to contain the well through numerous methods, federal oversight increased significantly as BP’s failures persisted. While this may have given the impression of federal authority, many felt that these efforts were too little, too late.

Federal Structure of Command

The Oil Spill Pollution Act (OPA) was signed into law in August 1990 by George H.W. Bush, largely in response to public concern with the Exxon Valdez oil spill. The OPA greatly expanded the federal government’s management over response and prevention of spills off the coast of the United States by providing money and resources. The OPA also included a section that amended the National Oil and Hazardous Substances Pollution Contingency Plan, otherwise known as the National Contingency Plan (NCP). The NCP is the federal government’s blueprint for responding to and preparing for both oil spills and hazardous substance releases. The OPA amended the NCP by including a section that specifically prepares for a Spill of National Significance (SONS) including description, impact and the need for coordination between federal, state, and local governments alongside the responsible party.

National Incident Management System (NIMS)/The Incident Command System (ICS) is a core set of principles guiding a nation wide response to natural disasters and emergencies and is the national standard by which all response organizations plan for emergencies. NIMS/ICS is intended to command, control and coordinate a response when the spill goes beyond the jurisdictional or functional responsibility of more than one agency. The ICS coordinates the efforts of individual agencies to work towards one common goal, regardless of the size of the incident.

The Unified Command (UC) is an expansion of the ICS which includes agencies, organizations, and or private industries which have authority and jurisdiction over aspects of the spill response. A Unified Area Command (UAC) is established when incidents under an area command involve multiple jurisdictions. It also enacts the Federal On Scene Coordinator (FOSC) which, among other things, is responsible for directing and providing technical assistance to all response efforts at the site as well as ensuring access to information (U.S. Coast Guard 2010:3)

Beginning with the 1968 National Oil and Hazardous Substances Pollution Contingency Plan, otherwise known as the National Contingency Plan (NCP), the federal role in oil spill response was codified. Since then, the NCP has grown in size and scope to now encompass 15 federal agencies that make up the NRT including the EPA, USCG, U.S. Department of State (DOS), U.S. Department of Defense (DOD), U.S. Department of the Interior (DOI), U.S. Department of Justice (DOJ), U.S. Department of Transportation (DOT), U.S. Department of Energy (DOE), General Services Administration (GSA), Federal Emergency Management Agency (FEMA–DHS), U.S. Department of Agriculture (USDA), Department of Labor (DOL), Department of Health and Human Services (HHS), Nuclear Regulatory Commission

(NRC), and Department of Commerce/National Oceanic and Atmospheric Administration (NOAA) (U.S. Coast Guard 2011:39).

Once a significant oil spill has occurred in the United States, a chain of federal organizations are activated to respond to the incident. The National Response System (NRS) is the mechanism for coordinating response actions by all levels of government working in support of the Federal On Scene Coordinator (FOSC). Under the jurisdiction of the Coast Guard, the FOSC is the primary federal responder that directs and coordinates all response efforts. The NRS is comprised of a number of levels beginning locally with the Area Committee, which involves representatives from federal, state, and local governments that assist the FOSC in preparing for emergency response through development of an Area Contingency Plan (ACP). The Regional Response Team (RRT) includes federal and state agency representatives that assist the FOSC in planning, preparedness, and coordination at a regional level. As the Coast Guard's (2011:140) review explains:

There are 13 Regional Response Teams (RRTs), 1 for each of 10 Federal regions plus 1 for Alaska, 1 for the Caribbean, and 1 for the Pacific Basin. Each RRT maintains a Regional Contingency Plan (RCP) and has State as well as Federal Government representation. EPA and the Coast Guard co-chair the RRTs. Like the NRT, the standing RRTs are planning, policy, and coordinating bodies and do not respond directly to the scene. The RRT provides assistance as requested by the On-Scene Coordinator during an incident.

Included under the authority of the RRT is the use of dispersants, which can be preauthorized under the oil spill response plan. Assisting at all levels of the NRS are scientific, technical, and other specialized support entities from various federal agencies (U.S. Coast Guard 2011:139).

There was a great deal of confusion as to how to respond to the disaster on the part of the states and local officials. Due to their frequent experience with hurricanes,

the Gulf States are familiar with the emergency response as delineated by the National Response Framework under the Stafford Act. In a bottom up fashion, the NRF gives more authority to the local level through a state directed, though partially federally funded, response to disasters. The NCP on the other hand, implements spill response in a top down manner with the federal government managing state operations with little involvement from the local level (U.S. Coast Guard 2011:71; U.S. National Commission 2011:138).

Under the NCP, the National Response Team (NRT) role is to oversee the RRTs and provide national level technical coordination and support to response organizations. However, “The extensive involvement of the White House and top Administration officials resulted in what many have termed the “political nullification” of the NRT in the Deepwater Horizon incident, feeling that the NRT was essentially bypassed as the central policymaking body for oil spill response” (U.S. Coast Guard 2011:86). In this regard, the administration officials overstepped their boundaries and did not abide by the national structures of oil spill response. These actions unnecessarily complicated the response and hindered efforts according to the Coast Guard.

Spills of National Significance

The Deepwater Horizon incident was declared a Spill of National Significance (SONS) on April 29, 2010, making it the first spill to be designated as such. As part of the National Response System, a Spill of National Significance is:

A spill that, due to its severity, size, location, actual or potential impact on the public health and welfare or on the environment, or the necessary response effort, is so complex that it requires extraordinary coordination of Federal, State, local, and responsible party resources to contain and clean up the discharge. (U.S. Coast Guard 2011: 141)

Once a SONS has been declared, a number of federal resources are initiated including the National Incident Command and the National Incident Commander (NIC). Although there is no formal policy or doctrine directing its functions, the National Incident Command is an overarching federal organization designed to address the demand for information from officials, media and the public. In an attempt to create a cohesive message, the NIC organization provided operational control in implementing the “whole of government” response by acting as a central clearing house for vetted information. Although the NIC was initially slow to respond and forced to catch up on information gaps, it was progressively able to invoke a “unity of messaging” as the spill continued (U.S. Coast Guard 2011:82).

Once the NIC goes into effect, the Federal On Scene Coordinator in charge is replaced by a National Incident Commander who becomes the public figure leading the response. The function of the National Incident Commander (NIC) is to serve as the link between the President, the Secretary of Interior, the Commandant of the Coast Guard, and with all stakeholders in a catastrophic spill (U.S. Coast Guard 2010:1). Delaying his retirement to fight the spill, Coast Guard Admiral Thad Allen was appointed the NIC on May 1, 2010. Admiral Allen has had a long history with federal emergency response in the Gulf region. For example, he oversaw the ocean rescue and return of Elian Gonzalez in 1999. Moreover, in the aftermath of hurricanes Katrina and Rita and the incompetence of FEMA director Michael Brown, Allen was appointed by President Bush to lead the federal response. Furthermore, Allen also served as NIC in the 2002 SONS Gulf of Mexico drill, making him a qualified candidate if there ever was one. Initially, the role of the NIC was not clearly communicated to the public, but after some time Admiral Allen came to be viewed as a

credible spokesperson for the “whole of government” response (U.S. Coast Guard 2011:67).

While the federal government had been running drills for a SONS event since 1997, there had been no actual application of the drills to reality. The first SONS exercise took place in Philadelphia in 1997. After that, SONS exercises have taken place in Alaska in 1998, the Gulf of Mexico in 2002, California in 2004, the New Madrid Seismic Zone in 2007, and Northern New England in March 2010. Following each of these drills, after-action reports have been conducted to assess shortcomings in preparedness and offer recommendations for improvement.

In the 2002 Gulf of Mexico drill, in which Admiral Thad Allen functioned as the NIC, one problem that had been identified was the importance of properly managing onsite visits by VIPs (such as elected officials, senior agency and industry executives). Since multiple command centers are involved in cleanup operations, the report stressed that it would be prudent to maintain a single source of responsibility in handling VIP visits. Another trend observed from past SONS events was a lack of participation by the Department of Homeland Security which resulted in a lack of familiarity with the NCP (U.S. Coast Guard 2011:128-30). As the U.S. Coast Guard (2011:126) states:

There is a lack of Cabinet-level interest and participation in Spill of National Significance (SONS) exercises, which was demonstrated by many Cabinet-level individuals that became intimately involved in the incident demonstrating a lack of familiarity with marine oil spill management during the Deepwater Horizon incident.

This shortcoming had serious ramifications throughout the Deepwater Horizon response as officials from the White House and DHS circumvented the NRT and exercised significant authority outside of their jurisdiction. Although this weakness had been identified early on, the Coast Guard was unable to effectively integrate Cabinet

level administrators into the drills to properly educate them on their role in spill response. In spite of all the SONS drills and after action reports, “The Coast Guard has not demonstrated consistency in the implementation of lessons learned from major oil spill exercises or incidents” (U.S. Coast Guard 2011:130).

External Communications: “Feeding the Beast”

Lessons learned from these drills concerning the lack of involvement from the White House and DHS would come back to haunt the response to Deepwater Horizon. The Coast Guard and other responders were unprepared to deal with the onslaught of demands for real time information from the public, media and other government organizations. As the Coast Guard’s review of the Deepwater Horizon response found, the number of career public affair specialists within the agency had dwindled over the past decade, resulting in a lack of senior personnel with the requisite crises communications training (U.S. Coast Guard 2011:66). Managing information was a major obstacle to the response organization. As the Coast Guard’s (2011:96) report states:

Many responders described the problem as the seemingly insatiable demand for more and more granular information. The phrase “feeding the beast” was used to describe the process by which officials tried to meet that demand. Attempting to meet the continuing demand for information competed with the response organization’s staffing resources. When asked about info management, every person interviewed during this review stated that “feeding the beast” affected the entire response in a negative manner.

Political influence from the White House and the Department of Homeland Security also complicated the response by instituting several layers of review and approval in an effort to craft a unified message. This “whole of government” approach “...hindered the Coast Guard’s ability to meet National Contingency Plan requirements for keeping stakeholders informed about the status of the response”

(U.S. Coast Guard 2011:65). External and public affairs functions became centralized and were elevated to the highest levels of the response organization, the Unified Area Command, which became the hub for information (2011:66). Lower levels of the response organization were restricted from interacting with local and national media. Coast Guard officials, including the most senior in command (the Federal On Scene Coordinator), were prohibited from making statements to the media that were not first reviewed by the White House and DHS. The chain of approval for public statements as described the Coast Guard's (2011:67) review:

Information regarding the incident was channeled up to the UAC where it was packaged and released after review and approval from DHS [Office of Public Affairs]. Coast Guard FOSCs who operated at the UAC were not authorized to conduct media interviews, hold press conferences, or send press releases without prior approval from DHS. The additional handling and approval process for releases of information often prevented the response organization from providing real-time information. Because the Coast Guard was severely restricted in its ability to distribute timely, accurate information, it was perceived by some that the Federal Government was purposely withholding information pertaining to the incident from the American public.

The complex structure of federal review contributed to a sluggish release of information to the public. Moreover, such dominance in external communications from the administration departed from the traditional National Response Team's Joint Incident Command model by excluding BP from media opportunities. Following failed attempts to plug the well and increased federal oversight in the response, government officials symbolically halted their practice of holding joint press conferences with BP (U.S. National Commission 2011:151). Viewing the responsible party as a co-combatant, the Coast Guard felt that the exclusion of BP from media events obfuscated the appearance of a "joint" or "unified" response (U.S. Coast Guard 2011:67).

Government Science Advisors

On May 10, 2010, President Obama appointed Department of Energy Secretary Dr. Steven Chu to gather a team of government officials and scientists to assist BP in containing the well. These “government science advisors” were well respected in their fields, but had limited experience with deepwater petroleum engineering. Over time, the science advisors evolved from helping BP diagnose the situation, to “substantively overseeing BP’s decisions on containment” by June. However, in large part government scientists were dependent on BP for data and expertise. As the National Commission (2011:149) states:

Perhaps because the lines of authority were unclear, BP’s sharing of data with the government science teams was uneven at first. BP gave information when asked, but not proactively, so government officials had to know what data they needed and ask for it specifically. Finally, both the national laboratories team and the science advisors had to educate themselves on the situation, and on deepwater petroleum engineering, before they knew enough to challenge BP and participate in high-level decisionmaking.

Despite their best efforts, delayed federal involvement and a lack of access to information hindered the ability of government advisors to take on an effective supervisory role.

BP’s Role in Unified Command

The Oil Pollution Act 1990 makes clear that in the event of a spill, the private company (the “responsible party”) is responsible for plugging the well, cleaning up the oil and compensating the victims. The Coast Guard had the option to “federalize” the spill under the Oil Spill Liability Trust Fund (part of the OPA 1990), thereby leading and funding all aspects of the cleanup process and seeking reimbursement for the expenses later from the responsible party. Instead, the Coast Guard chose to work in coordination with BP, viewing them as a “co-combatant” in fighting the spill (U.S.

National Commission 2011:134-5). As the National Commission (2011:133-4) describes:

Consistent with the Unified Command framework, BP played a major role from the outset. Most Coast Guard responders had a BP counterpart. For instance, Doug Suttles, BP's Chief Operating Officer of Exploration and Production, was the counterpart to the Federal On-Scene Coordinator. BP employees were scattered through the command structure, in roles ranging from waste management to environmental assessment. Sometimes, a BP employee supervised Coast Guard or other federal responders.

At the time of the disaster, the Minerals Management Service (MMS) was the only federal agency responsible for understanding and regulating deepwater wells and related technology. Throughout the efforts to contain the blowout, MMS employees struggled to oversee BP's operations due largely to a disparity in resources, technical knowledge and expertise. Due to this, the MMS was effectively unable to oversee and regulate BP's containment efforts. Nonetheless, both the Coast Guard and MMS were required to work side-by-side with the responsible party to stop the spill. According to the National Commission (2011:136):

Though the Coast Guard and MMS believed they had to work closely with BP, others in government did not share this view of the relationship with the responsible party. At an April 29 press conference with several senior administration officials, Coast Guard Rear Admiral Sally Brice O'Hara referred to BP as "our partner," prompting Secretary Napolitano to emphasize, "They are not our partner." Secretary Salazar later said on CNN that the government would keep its "boot on the neck" of BP."

Regardless of such rhetoric, BP worked quite closely with federal responders, at times uncomfortably close. Furthermore, BP's employment of a wide array of privately contracted oil spill response organizations raises the question of who was really directing response efforts.

Private Contractors: Oil Spill Response Organizations (OSRO)

There exists an entire industry which caters to the needs of both responsible parties and government responders during oil spills. Nearly all of the response efforts in the Gulf were outsourced to private contractors hired by BP. According to Johnson (2010b), BP employed a massive “private contractor army” of oil spill response organizations:

The true story of the BP disaster is how private contractors, not the government, are handling the response. Of the tens of thousands of people responding to the greatest environmental catastrophe in the history of the nation, vast majority are under contract to the foreign oil giant BP. This private army includes workers shipped in from California making \$10 an hour to clean the beaches, ex-military public relations experts, and submarine robotics companies. There are no contractors working directly for the government.

In oil spill clean up, the Coast Guard is granted supervisory powers over oil spill response, though it is not responsible for providing the majority of the equipment. As the National Commission (2011:132) states:

Although the National Contingency Plan requires the Coast Guard to supervise an oil-spill response in coastal waters, it does not envision that the Coast Guard will provide all, or even most, of the response equipment. That role is filled by private oil-spill removal organizations, which contract with the oil companies that are required to demonstrate response capacity. BP’s main oil-spill removal organization in the Gulf is the Marine Spill Response Corporation, a nonprofit created by industry after the Exxon Valdez disaster to respond to oil spill.

The Marine Spill Response Corporation and its network of subcontracted response organizations went into action following the explosion of Deepwater Horizon on April 21, 2010.

Working conditions of private contractors

The overwhelming majority of the labor involved in the cleanup efforts was privately contracted and overseen by BP. According to the U.S. Occupational Health

and Safety Administration (2011:2) who monitored the working conditions of spill responders:

During the peak of the operations, more than 47,000 men and women were involved in responding to and cleaning up the oil spill each day. This included more than 42,000 response and cleanup workers employed by BP and its contractors, 1,600 members of the National Guard, and more than 2,400 federal employees. The area of operations spanned the coastline from Louisiana to Florida, as well as offshore operations from the shoreline to the site of the release; 6,400 vessels were involved in the operations.

It became apparent early on that the network of private OSROs was insufficiently staffed to deal with a spill of such magnitude. This lack of personnel created a “HR challenge” as OSROs rapidly conducted background checks, physicals and drug tests, before hiring and training responders within a little over a week. “Once hired, the individuals were ‘badged’ as a BP contractor...” (U.S. Coast Guard 2011:103).

Long hours, scorching heat and hazardous working conditions contributed to significant workforce turnover, especially within the ranks of the beach cleaning personnel. Per OSHA regulations, beach workers began their day at 6 a.m. and cleaned for 20 minute intervals and then rested for 40 minutes to allow respite from the sun. Described as a “Sisyphean task,” workers assigned to beach cleanup were divided into two teams which continued this regimen for twelve hours per day, seven days per week under the blazing sun. Advertised by the Louisiana Workforce Commission as “green jobs,” hazardous oil spill removal cleanup paid \$10 and received hundreds of unemployed applicants. This labor force, however, was inconsistent (Young 2010). As noted by the Coast Guard (2011:104), the treacherous working conditions resulted in an unreliable labor force with rates of high turnover:

However, because so many of these individuals on this incident had no previous experience in oil spill cleanup, a large number of them were surprised by the difficult conditions they encountered, including long hours and often extremely dangerous heat indices. As a result there was

significant turnover in the ranks of new hires, especially in the ranks of beach cleaning personnel.

Parish presidents put a great deal of pressure on BP and Unified Command to employ local fishermen left without work due to the spill, who they saw as more capable due to their familiarity with the Gulf. Furthermore, Gulf residents were also hesitant about the private contractors brought to the region to respond to the spill who might be depriving deserving locals of opportunities. According to the National Commission (2011:140):

As contractors and subcontractors set up camp in towns across the Gulf to carry out response activities, residents viewed them with suspicion. People in Lafourche Parish, for example, worried about the out-of-state oil-spill-response contractors who took over their shores bringing crime and taking away spill-related job opportunities.

Despite concerns such as these, BP continued to rely on out-of-state labor though making select efforts to utilize certain local labor supplies.

Inmate Labor

In some instances, rather than paying local residents to clean the beaches, BP employed tax-deductable prison labor. Not only is prison labor inexpensive, but inmates are easier to silence compared to free citizens. Incentivized by the Work Opportunity Credit which rewards the private sector for hiring certain risky “target groups,” employers can earn a tax credit of \$2,400 for each work release inmate, and are also eligible to earn back 40% of the wages paid (Young 2010). With no control over their work assignments, inmates were coerced into enduring one of the most toxic jobs. As Young (2010) asserts:

Inmates can’t pick and choose their work assignments and they face considerable repercussions for rejecting any job, including loss of earned “good time.” The warden of the Terrebonne Parish Work Release Center in Houma explains: “If they say no to a job, they get that time that was taken off their sentence put right back on, and get sent right back to the lockup they came out of.” This means that work

release inmates who would rather protect their health than participate in the non-stop toxic cleanup run the risk of staying in prison longer.

In the media and government sources alike, reports of prison labor in the response are virtually non-existent, yet it was common knowledge to those involved in cleanup efforts. As part of their sentence, some inmates were forced to endure hazardous working conditions without pay while officials publicized the efficient use of convict labor. Young (2010) documents:

A lieutenant in the Plaquemines Parish Sheriff's Office told me that three crews of inmates were sandbagging in Buras, Louisiana in case oil hit there. "They're not getting paid, it's part of their sentence," she said. "They'll work as long as they're needed. It's a hard job because of the heat, but they're not refusing to work." In early May, Governor Bobby Jindal's office sent out a press release heralding the training of eighty inmates from Elayn Hunt Correctional Center in "cleaning of oil-impacted wildlife recovered from coastal areas."

While the efficient use of convict labor appeared to officials as positive public relations, some Gulf residents were incensed by the reliance on prison labor. Even though many were reticent to voluntarily apply for beach cleanup jobs, locals were nonetheless angered by the visible use of prison labor over more deserving unemployed residents. Even so, the needs and desires of local residents were superseded by the desires of BP's private contractors.

According to Perkins, the Louisiana Secretary of Corrections, James LeBlanc, met with disaster contractors in early June and asked them to stop using inmate labor until all unemployed residents found work. But as the spill has so dramatically demonstrated, in this new environment, the government seems only able to make polite requests. BP calls the shots, and its private contractors, like ES&H, are the sole clean-up operators. From there, subcontractors, such as Able Body Labor, decide whom to employ. (Young 2010)

In spite of anger from Gulf residents about the loss of job opportunities, prison inmates continued to play a large role in the beach cleaning efforts. The power of BP and its contract army prevailed over the concerns of the victimized local population.

Racial Disparities

Beyond inmates though inclusive of them, African Americans were overrepresented in the most dangerous jobs during response operations. So conspicuous was the racialized nature of the cleanup that the president of the National Association for the Advancement of Colored People (NAACP) Benjamin Todd Jealous sent a letter to BP's CEO Tony Hayward documenting the injustices and asking BP to address them. During his trip to the Gulf, Jealous (2010) observed that, "Workers of color tend to be assigned the most physically difficult, lowest paying jobs, with the most significant exposure to toxins, while white workers tend to be in supervisory, less strenuous positions." Furthermore, he noted that contractors of color were not being given equal consideration for job opportunities. Those residents who were participating in response operations were not being provided proper protective clothing or masks, often resulting in reports of irritated eyes, nausea, breathing problems and headaches. Additionally, workers were also required to sign nondisclosure forms which forbid them to discuss the hazards of their working conditions. As Jealous noted (2010), "People who are compelled to apply for cleanup work in order to feed their families- due to inadequacies of the claim process- are forced to sign documents that prohibit discussion of working conditions and forfeit legal redress for lost livelihoods." In closing, Jealous ends his letter to Hayward requesting that BP take action to deal with the racial disparities. It does not appear that corrective actions were taken to remedy these problems.

Even amidst the frenzy to screen, hire and train responders, federal officials took special effort to ensure that BP and its subcontractors were not hiring undocumented immigrants. Desperate for jobs and fearful of competition, Gulf

residents were quick to react to even the appearance of undocumented cleanup workers. In the midst of such a crisis, pro-immigration advocates questioned the wisdom of halting cleanup operations to check the legal status of workers. According to Correal (2010), on two different occasions in May “Immigration and Customs Enforcement (ICE) in Louisiana confirmed that its agents had visited two large command centers—which are staging areas for the response efforts and are sealed off to the public—to verify that the workers there were legal residents.” Despite close monitoring of response efforts by the Border Patrol and ICE, no arrests were made during the raids. Nonetheless, undocumented workers were still used in cleanup operations, providing yet another population of controllable labor (Correal 2010).

Waste disposal and environmental justice

A less visible dimension of the cleanup was the disposal of the waste that had been removed from beaches and skimmed from the water. After collection, the waste was then bagged by BP’s contractors before being transferred to area landfills which were disproportionately located in minority and low income communities. As of August 1, 2010, BP’s Oil Spill Waste Summary asserted that nearly 40,000 tons of oiled waste had been put into landfills in Alabama, Florida, Louisiana and Mississippi (Bullard and Huang 2010). When possible, oil was recycled and reprocessed, for example with contaminated water, but in many cases oil soaked clothing, boom and other debris is impossible to clean and must be discarded.

A 1988 EPA exemption to the federal Resource Conservation and Recovery Act (RCRA) allows waste from oil and natural gas exploration and production to be deposited into municipal landfills without being labeled as “hazardous.” However, the EPA later acknowledged that despite the exemption, oil spill waste nevertheless posed harm to human health and the environment if not managed properly (Schor 2010a).

Stressing the need to retract exemptions for the oil and gas industry as a means of strengthening local control over waste management, Schor (2010a) cites New Mexico environment secretary Ron Curry:

“I’m not saying that if these exemptions were gone, the spill in the Gulf would have not occurred,” Curry said. “But what it signifies is ... at the state and federal level, how strong the oil industry’s input is.” If state officials want to take a firmer hand in protecting local groundwater from toxic trash, Curry added, “these laws stand in your way.”

Even though cleanup workers wore protective clothing to handle the waste, it was never officially designated as “hazardous” therefore allowing it to escape more stringent handling standards.

The National Commission (2011:170) points out that the federal government does not normally supervise the disposal of non-hazardous waste, and the EPA continues to maintain that waste from the BP spill is not hazardous. Yet on June 29, 2010 the EPA and Coast Guard issued a directive which mandated BP to submit a number of reports (referred to as “Deliverables”) that addressed: regularly sampling and testing the waste, tracking where the waste was being handled (in “staging areas”) and where it was disposed, as well as developing a community outreach program that made information available to the public about the waste disposal plan (Watson and Armendariz 2010). Despite continued pressure from the Coast Guard, BP deferred the release of data on waste management and was not forthcoming with officials or the public about its operations. Although BP’s “Recovered Oil/Waste Management Plan Houma Incident Command” was approved on June 13, 2010, it was not until August 19, 2010 that BP submitted the final “Deliverables” satisfying the Coast Guard and EPA’s requirements.

Once BP and the EPA began implementing the directive, concerns of environmental justice were raised as waste from the spill cleanup was disproportionately

dumped into municipal landfills in minority and low income areas. Environmental justice scholar Robert Bullard (2010) explains that:

...a significantly large share of the BP oil-spill waste, 24,071 tons out of 39,448 tons (61 percent), is dumped in people of color communities. This is not a small point since African Americans make up just 22 percent of the coastal counties in Alabama, Florida, Mississippi, and Louisiana, while people of color comprise about 26 percent of the population in coastal counties.

Furthermore, the largest amount of waste (14,228 tons) was sent to a landfill located in a community where people of color make up three-fourths of the residents living nearby. Minority communities throughout the Gulf region have historically endured a disproportionate burden of environmental harms that gave rise to the environmental justice movement. As Bullard (2010) concludes, “Allowing the BP, Gulf Coast states, and the private disposal industry to select where the oil-spill waste is dumped only adds to the legacy of environmental racism and unequal protection.”

For the duration of the response, this intricate web of federal, state, local and private sector response organizations exerted unprecedented force against the persistent spill on the shores and in the waters of the Gulf. At times, it was often unclear exactly who, or what, was directing the flow of response operations. Through its extensive employment of private sector contractors, BP at least maintained financial, if not operational, control over the oil spill response apparatus. Officials from the White House and DHS sought to create a unified message to the public by prohibiting officials within the Coast Guard and other agencies from releasing statements that had not first been reviewed and approved by the administration. In this regard, the Obama administration seemed to be primarily concerned with promoting positive public relations, both for itself and for BP. As the spill dragged on and public anger mounted against BP, oversight increased significantly as the federal government sought to maintain its legitimacy.

Killing Macondo

Once the spill began, it did not take long to realize just how unprepared both the federal government and the offshore industry were to contain an uncontrollable deepwater blowout. Despite past warnings attesting otherwise, the offshore industry as a whole seemed to be under the dangerous delusion that there was essentially no risk of a deepwater blowout. Since the Exxon Valdez, the Oil Pollution Act of 1990 had failed to incentivize industry to make necessary improvements in spill response technologies and did not provide funding for federal agencies to conduct research. As the National Commission states (2011:132-3), “Though incremental improvements in skimming and boom had been realized in the intervening 21 years, the technologies used in the response to *Deepwater Horizon* and *Exxon Valdez* oil spills were largely the same.” Similarly, compared to the June 1979 blowout of Mexico’s exploratory Ixtoc well in the Bay of Campeche, the desperate methods to contain the Macondo well were virtually identical. As the Coast Guard’s (2011:109-10) review argues:

There appeared to exist a long-standing belief by BP and the industry that, through safety system redundancy and the multiple layers of mitigation measures designed to reduce the operational risk during exploratory well drilling operations, the ultimate risk of a deepwater well blowout was essentially zero....The mentality associated with mitigation layers and attendant risk reduction is well rooted and widespread throughout the exploration and development community within the United States, and has had the effect of creating a void in any type of substantive research to advance response equipment technology...

Moreover, with the exception of the containment dome, BP did not begin to construct any of the deployed containment devices including the riser insertion tool, the top hats, top caps or the capping stack until after the spill had already begun (U.S. Coast Guard 2011:109). The search for effective response technologies to an uncontrollable

deepwater blowout did not become a priority until the explosion of the Deepwater Horizon forced it.

Methods to Contain the Spill

As contractors for BP came to realize that they would be unable to activate the blowout preventer to close the well after the third attempt, they began to search for more innovative options. Early on, drilling a relief well was recognized as the primary option to address the blowout, though it would take up to three months to complete. Drilling for the primary relief well began on May 2, and after insistence from Secretary Salazar, BP began drilling a back-up relief well on May 17 (U.S. National Commission 2011:132).

While efforts to collect the oil and contain the well ensued, other methods were used to deal with the surface oil. These methods included placing boom (which is used to corral and contain oil) and skimming with vessels to collect the oil, applying chemical dispersants to oil slicks (and at the wellhead), as well as in-situ burning. Due to its prominent visibility, boom came to be viewed as a measurement of the federal response by local residents. As a result the placement of boom came to be driven by political and economic pressures rather than by the need to protect environmentally sensitive areas (U.S Coast Guard 2011:76; U.S. National Commission 2011:153).

Prior to Deepwater Horizon, in-situ burning (ISB) had never been used operationally on such a wide scale, though it has been used in spill cleanup since 1967. In-situ burning, which is the process of containing, igniting and controlling spilled oil, was quite efficient and as a result played an expanded role in the response. According to the U.S. Coast Guard (2011:48):

There were a total of 411 burns initiated during the Deepwater Horizon incident, of which 376 were determined to have burned a significant quantity of oil. The longest duration burn lasted for more than 11 hours, and there was some limited night burning. Sixteen ISB

operations were conducted on June 18 alone, accounting for the removal of approximately 2.5 million gallons of oil.

These efforts helped prevent oil from reaching the shoreline and environmentally sensitive areas, but emitted immense amounts of hydrocarbons into the atmosphere in the process. As a precaution, air quality and its effects on wildlife were monitored during ISBs. Despite ISBs proclaimed success, there was nonetheless insufficient burning equipment in the Gulf, leaving responders struggling to manufacture and obtain scarce response resources (U.S. Coast Guard 2011:46-8).

Chemical dispersants were also used in unprecedented proportions in response to the spill. In addition to surface application, for the first time dispersants were also applied subsurface directly at the well head. In total, more than 1.8 million gallons were used to break up the oil into small droplets which then sank to the bottom of the Gulf. A lack of research on the effectiveness of dispersants in addition to their toxicity led the public and officials alike to question their excessive use. These concerns notwithstanding, dispersants played a key role in reducing the immediate visible impact of the spill.

Containment dome

At the same time that BP scientists were contemplating the novel use of subsea dispersants, they began considering the use of a containment dome, also known as a “cofferdam,” to capture the oil. Following inspection by the MMS, the containment dome was lowered on the evening of May 6, 2010. Although the likelihood of collecting oil with the cofferdam was quite uncertain, in a presentation to the Department of Interior BP presented the likelihood of success as “Medium/ High.” Industry experts speculated that this method would fail due to hydrate formation that would cause blockage, which in the end was the cofferdam’s downfall. Furthermore, the ill fate of the cofferdam was also affected by inaccurate estimates of the flow rate.

BP claims that during this time it believed the flow rate to be less than 13,000 to 14,000 barrels a day and therefore based collection capacity at a maximum of 15,000 barrels a day. Yet as it was later revealed, the well was actually gushing at a rate of 60,000 barrels a day (U.S. National Commission 2011:145-6).

After the failure of the containment dome, the next collection device BP attempted was the Riser Insertion Tube Tool on May 16, 2010. The Riser Insertion Tool was a tube four inches in diameter that fit into the end of the riser and transported oil to the Discoverer Enterprise vessel above. Over the course of its nine days of use, this first effective means of containment captured 22,000 barrels of oil (U.S. National Commission 2011:146).

Top kill and junk shot

Though they had never been used in deepwater, the “top kill” and “junk shot” methods to contain the well were standard industry techniques for dealing with a blowout. The National Commission (2011:149) explains:

A top kill—also known as a momentum or dynamic kill—involves pumping heavy drilling mud into the top of the well through the BOP’s choke and kill lines, at rates and pressures high enough to force escaping oil back down the well and into the reservoir. A junk shot complements a top kill. It involves pumping material (including pieces of tire rubber and golf balls) into the bottom of a BOP through the choke and kill lines. That material ideally gets caught on obstructions within the BOP and impedes the flow of oil and gas. By slowing or stopping the flow, a successful junk shot makes it easier to execute a top kill.

Fighting pollution with pollution, beginning May 26, 2010 for a period of three days BP pumped over 100,000 barrels per day of heavy drilling mud and made numerous shots of junk into the blowout preventer in a desperate attempt to plug the well. Like the cofferdam, BP’s Hayward overinflated the potential for success while industry and government officials were less hopeful. Even BP engineers had admitted that the top

kill method was unlikely to work if the flow rate exceeded between 13,000 and 15,000 barrels a day (U.S. National Commission 2011:150). Thus, had an accurate flow rate been available at the time, such efforts might not have been attempted. As the Coast Guard's (2011:37) review asserts:

The "official" flow rate throughout the Top Kill preparation and at the beginning of the Top Kill operation was 5,000 BPD. Information gained through the Coast Guard's Preparedness Review process indicated that engineers involved in the Top Kill attempt felt that the effort would fail if the flow rate were above 13,000 BPD. One can only speculate at this time whether or not the Top Kill attempt would have been undertaken had more accurate flow rate information been available to those working on the source control issue.

BP speculated that the most likely reason for the failure was the collapse of rupture disks and feared that as a result, capping the well might no longer be an option. Previously, BP had stated that if the top kill was unsuccessful, that the next step might be to cap the well by installing a second blowout preventer. Shutting in the well in this manner involved significant risk of oil and gas flowing through the ruptured disks and into the rock surrounding the well thereby causing an "underground blowout" where hydrocarbons would rise through the layers of rock and up through many points in the seabed floor. As a result, BP and the government opted to table the strategy of capping the well until early July (U.S. National Commission 2011:158).

Following the failure of the top kill and junk shot methods, confidence in BP's ability to manage containment efforts waned and public anger surged. "The failure of the top kill marked a turning point for the government science teams, with the government significantly increasing its oversight of the containment effort" (U.S. National Commission 2011:158). Marking the start of increased government oversight, on May 28, 2010 President Obama made his second trip to the Gulf to meet

with state and local officials. Around this time Obama made a number of key announcements. First, on May 21 he established the National Presidential Commission to investigate the spill. Second, he issued a “tripling” order of Coast Guard forces. Third, on May 27 he also announced a temporary moratorium on deepwater drilling which would remain in place until it was lifted seven weeks ahead of schedule on October 12 (U.S. National Commission 2011:150-1). By the middle of June, the federal oversight structure was more firmly in place (2011:161).

As part of the increased federal oversight, the government science advisors also began reviewing BP’s strategy for well containment, questioning assumptions and evaluating worst case scenarios (U.S. National Commission 2011:161). Enclosed with a June 18, 2010 email from Dr. Chu to the advisory team, the Secretary formally ordered the Federal On Scene Coordinator Admiral Wilson, to require BP to submit any pending decision on containment to the government for review. Moreover, during mid to late June the science advisors also began to increasingly seek the advice of industry experts about source control which frustrated BP, but was generally helpful to government personnel (2011:162).

Top hat and capping stack

Continuing to pursue collection efforts, BP’s next strategy beginning on June 1, 2010 was to sever the riser still attached to the blowout preventer to install a collection device, known as a “top hat,” directly on top of it. Learning from the cofferdam experience, this time BP took efforts to prevent the formation of hydrates by injecting methanol. The top hat was in place by June 3, and by June 8 the device was collecting 15,000 barrels of oil per day (U.S. National Commission 2011:159).

The next effort was installing a “capping stack” on top of the blowout preventer in hopes of shutting in the well. A capping stack is a smaller version of a

blowout preventer which is similarly designed to stop the flow of gas and oil. The strategy was uncertain with the possible risk of an underground blowout. Installation began on July 9, 2010 and the cap was in place by July 12. While the process of temporarily closing the capping stack through a well integrity test was authorized by Admiral Allen on July 12, the test was postponed following concerns from industry representatives. According to the National Commission (2011:164):

BP faced significant criticism of the wisdom of attempting the test, with Exxon and Shell raising concerns associated with shutting in the well that had yet to be considered by BP or the government. In the most extreme scenario, one industry expert suggested that an underground blowout could cause the sands around the wellhead to liquefy and the entire BOP to disappear into the sea floor.

Considering these risks, the government science advisors opted to postpone the test for 24 hours while additional analysis could be conducted. Satisfied with their review, the advisors reauthorized the test but with careful monitoring of well pressure throughout its duration. Under close observation, on July 15, 2010 BP began to shut the stack and for the first time in 87 days, no oil flowed from the well. Early pressure data alarmed the government science advisors, leading almost everyone to favor ending the test and reopening the well. Notwithstanding these concerns, the well remained closed at BP's insistence.

Using a procedure called "static kill," on July 19, 2010 BP raised the possibility of killing the well before completing the relief well. The static kill strategy is similar to the top kill strategy as heavy drilling mud is pumped into the well to push back gas and oil. However, the pumping rates necessary for the static kill to succeed were now far lower since the well had been capped (therefore making the oil and gas "static"). Like the others, this procedure was also incredibly risky. Stressing the radical uncertainty of the situation:

On July 28, BP received an unsolicited letter from Pat Campbell, a Vice President at Superior Energy Services, which owned BP contractor Wild Well Control, recommending in no uncertain terms that the static kill not proceed. Campbell, who had worked with legendary well-control expert Red Adair, reiterated a point already raised by others in the industry: that the only pressure the well could withstand for certain was the current shut-in pressure (approximately 6,920 pounds per square inch at the time he wrote). (U.S. National Commission 2011:167)

Regardless of these hesitations, the government approved BP's plan for the static kill which began on August 3, 2010. The static kill succeeded and BP followed the mud with cement. On August 8, Admiral Allen announced that the well had passed the pressure test which continued to hold the despite concerns.

The first relief well intercepted the Macondo well in mid-September which allowed BP to inject cement and permanently seal the reservoir on September 19, 2010. After a long, desperate battle the BP-government strategy was finally victorious as Admiral Allen announced, "the Macondo 252 well is effectively dead" (U.S. National Commission 2011:169). Once the well was sealed the number of responders in the Gulf began to scale back and the National Incident Command officially stood down on October 1, 2010 (2011:170).

Although Macondo was officially declared dead on September 19, 2010, recent reports from August 2011 have even suggested that the Macondo well was not successfully capped. Fifteen months after the well was capped, large oil sheens were reported near the site. While BP officials and the Coast Guard deployed two submersibles to investigate the site, they claimed that no oil had been released. However, a sample of oil analyzed by Edward Overton, professor emeritus at Louisiana State University's environmental sciences department identified the oil as nearly identical to that of the Macondo well (Jamail 2011). If reports of continued oil

flowing from Macondo are accurate, they have not warranted much attention from officials, the media, or the public.

Conclusions

The Deepwater Horizon explosion and the blowout of Macondo was the first spill to ever be designated a Spill of National Significance. As predicted by multiple training exercises, federal responders encountered numerous problems including difficulty in coordination by DHS and other administration officials. Fearing another federal debacle in the Gulf like the Bush administration's response to Hurricane Katrina, the Obama administration and DHS officials sought to impose top down authority over spill operations, which created challenges for state and local officials who were accustomed to leading disaster response initiatives. Furthermore, political influence from the White House and the DHS also complicated the response by instituting several layers of review and approval in an effort to craft a united "whole of government" message. The expansive structure of Unified Command provided the opportunity for the Obama administration to exert influence over response efforts, at times beyond its jurisdiction.

As the responsible party under the OPA, BP played a key role as a "co-combatant" with the government in the fight against the spill. Although administration officials struggled to give the impression that they were in charge, BP's financial and technical capabilities exceeded those of government regulators at the MMS. This difference in expertise and funding created the opportunity for BP to assume functional control over many aspects of response efforts. As BP's attempts to plug the well failed and the spill dragged on, the Obama administration was motivated by public pressure to step up their oversight efforts and appoint "government science advisors"

to review BP's activities. Despite this, BP continued to remain a close partner in the Unified Command throughout response efforts.

BP's massive privately contracted army of oil spill response organizations further gave the company even greater control over response operations. Under federal law, the Coast Guard is responsible for overseeing cleanup operations, but it is not required to provide the equipment or workforce necessary to deal with a spill. Rather, privately contracted oil spill response organizations are extensively relied upon by the offshore oil industry to provide cleanup services. In such a dangerous work environment with long hours, scorching heat and hazardous materials, BP's extensive reliance on contractors and subcontractors to provide clean up workers made it challenging to oversee worker health and safety. As a means of concealing cleanup operations, workers were also required to sign documents that prohibited them from speaking about their working environment. Under such hostile conditions, turnover was high among cleanup workers. To solve this problem, BP and its contractors utilized prison labor to clean the beaches. As an easily silenced population, use of inmate labor to clean the beaches was an additional means of masking the extent of the damage. Raising questions of environmental justice, the poor and racial minorities were overrepresented in beach cleanup which is one of the most toxic jobs. Furthermore, oil spill cleanup waste was disproportionately dumped into landfills located in poor and minority communities, adding to the legacy of environmental racism and injustice experienced by the Gulf region. Selecting poor and minority communities to dispose of toxic waste from the cleanup is another means by which BP was able to conceal its environmental crimes.

As Macondo gushed relentlessly, the consortium of private contractors and subcontractors led by BP in conjunction with federal responders struggled to contain

the well through an array of outdated, poorly planned methods: Cofferdam, top kill, junk shot, top hat, capping stack and relief wells. Try as they might, even with the full force of tens of thousands of federal and private responders, Macondo would not be killed for nearly five months. Amidst the frantic attempts to control the well, one thing was clear: both government and industry alike were utterly unprepared to deal with a deepwater blowout.

CHAPTER SIX: MANIPULATION OF SCIENTIFIC EVIDENCE

At numerous points during the state-corporate response to the spill, both BP and the federal government took steps to manipulate, obscure and dismiss scientific evidence documenting the environmental effects of the oil from Macondo. Exerting a disproportionate amount of influence over research on the damage caused by the spill, BP took blatant steps to limit its liability by controlling scientific research through the Gulf of Mexico Research Initiative. Working together to disseminate disinformation about the environmental effects of chemical dispersants, the National Oceanic and Atmospheric Administration and BP conducted education outreach programs at Gulf Coast public schools. All of these actions are part of a broader trend in public-private educational partnerships between the oil industry and the academic community.

As the spill persisted, the Obama administration attempted to increase its supervision by establishing a team of government science advisers to oversee BP's well control efforts. Throughout the response to the spill, government science advisers in varying capacities downplayed, obscured and manipulated the findings of federal and independent scientists alike. Moreover, in the quest to establish an account of the amount of oil flowing from Macondo, the federal government consistently underestimated the flow rate, despite more accurate and much higher calculations from independent scientists.

To create an authoritative estimate of the spill, the Obama administration established the Flow Rate Group (FRG) and the Woods Hole Oceanographic Institute team led by Secretary of Energy Steven Chu. The Flow Rate Group experienced great pressure from the White House to downplay the size of their estimates. So severe was stress from the administration that a NOAA senior scientist on the FRG

misrepresented and distorted the group's findings as a result, leading to public discrediting of the team and their estimates. In the end the official flow rate of 4.9 million gallons of oil in total, was produced by the Woods Hole team led by Secretary Chu, who has had close ties to BP through the Biosciences Institute at University of California Berkley, the largest private-public university partnership. Finally, when the Obama administration unveiled the official estimate in August 2010 before the well had been declared dead, NOAA also released a report declaring that much of the oil in the Gulf had "disappeared" as a result of response operations. Yet as academic scientists were continuing to document, the oil had not disappeared but remained below the surface in the form of large plumes. Although NOAA dismissed the findings of scientists at first, as the peer reviewed evidence mounted the agency was forced to begrudgingly admit that the oil was indeed lurking below the surface.

"Independent" Public-Private Research Partnerships

BP's attempts to influence research findings through scientific misconduct in the wake of the Deepwater Horizon incident should not come as a surprise. In fact, as Washburn (2010) documents in *Big Oil Goes to College: An Analysis of 10 Research Collaboration Contracts Between Leading Energy Companies and Major U.S. Universities*, these efforts are part of a larger pattern of university-oil industry relations. In the era of declining public and governmental sources of funding for research, public universities increasingly rely on private funding to support their work. The major findings of the report demonstrate that in these partnerships, in most cases Big Oil disregarded the peer review process, assumed control of academic governing bodies, managed research proposal selection and monopolized the results of academic research. Thus, despite claims of neutrality and independence, funding from Big Oil has jeopardized the integrity of the scientific process.

Perhaps the best example of this trend is the Energy Bioscience Institute, the largest university-industry partnership in history. Over much controversy, the Energy Bioscience Institute was formed in 2007 when BP gave a ten year \$500 million grant to University of California Berkeley. The Institute, which develops alternative fuel sources, funds nearly 70 projects and 350 researchers at UC Berkeley and its two partner institutions, the Lawrence Berkeley National Laboratory and the University of Illinois at Urbana Champaign. Moreover, BP was given significant oversight over research projects. As Harkinson (2008) explains:

One last-minute change to the contract was particularly favorable to BP. The institute's governing board, which approves broad policy, the budget, and all research projects as a whole, was reconfigured from five members, with BP given a minority vote, to eight members, with BP given half the votes.

BP therefore retained significant authority over the content of research produced by the Institute, thereby setting the tone and tenor of private-university partnerships to come. Interestingly, Department of Energy Secretary, Dr. Steven Chu played a crucial role in brokering the BP-UC Berkeley deal when he served as the director of the Lawrence Berkeley National Laboratory and founding member of the Energy Bioscience Institute. Although the Department of Energy did not have jurisdiction over the spill, Chu nonetheless played a principle role in determining the official amount of oil flowing from the well. This close relationship led some to ask the question, "Is Steven Chu too cozy with BP?" (Harkinson 2010b).

BP Funded Gulf of Mexico Research Initiative

After pressure from Congressman Edward Markey, on May 24, 2010 BP pledged to establish the Gulf of Mexico Research Initiative, a ten year \$500 million "independent" research program. The managing board for the fund is comprised of scientists from outside the Gulf region as well as scientists appointed by state

governors, whose salaries are all paid by BP (Schrope 2011). Although stressing the importance of the peer review process and publishing the findings of funded research, evidence suggests that BP at least discussed the possibility of manipulating the fund to its benefit.

One email written by BP environmental officer based in Trinidad Karen Ragoonanan-Jalim contains the minutes of a meeting in Houma, Louisiana, during which officials discussed what kinds of studies might best serve the company's interests. She states:

Discussions around GRI and whether or not BP can influence this Long-Term Research Program (US\$500 million) to undertake the studies we believe will be useful in terms of understanding the fate and effects of the oil on the environment, eg can we steer the research in support of Restoration Ecology? (Ragoonanan-Jalim 2010)

Acknowledging that it may not be feasible to definitively control the outcomes of funded research, Ragoonanan-Jalim (2010) goes on to write, "It may be possible for us to suggest the direction of the studies but without guarantee that they will be done." The email continues on to raise the question, "How do we determine what biological/ecological studies we (BP) will need to do in order to satisfy specific requirements (legislative/litigation, informing the response and remediation/restoration strategies)" (Ragoonanan-Jalim 2010).

Another email from BP environmental expert Russell Putt to colleagues on June 24, 2010 more explicitly asks "Can we 'direct' GRI [Gulf of Mexico Research Initiative] funding to a specific study (as we now see the governor's offices trying to do)? What influence do we have over the vessels/equipment driving the studies vs the questions?" (Putt 2010). Internal company discussions such as these reveal the attempts of BP officials to manipulate the research funded by the Gulf of Mexico Research Initiative.

BP buying Gulf of Mexico university scientists

In July, 2010, BP was accused by the President of the American Association of University Professors Cary Nelson, of trying to quiet scientists asserting that, “This is really one huge corporation trying to buy faculty silence in a comprehensive way” (Bresnahan 2010). BP acknowledged that it hired more than a dozen national and local scientists “with expertise in the resources of the Gulf of Mexico,” offering a rate of upwards of \$250 an hour.

In one instance, the head of marine sciences at the University of South Alabama Bob Shipp was approached by BP lawyers to work with his entire department in developing a restoration plan for the spill. Shipp asserts that, “We laid the ground rules - that any research we did, we would have to take total control of the data, transparency and the freedom to make those data available to other scientists and subject to peer review. They left and we never heard back from them” (Bresnahan 2010)

BP desired to retain significant oversight and control over the work performed by the academic scientists it hired, made explicit in the contract. Under the services to be performed, the “Retention Agreement” states:

With regard to any other services relating to the Incident that are not specified in this Paragraph 1 above, you agree not to perform any such services without obtaining the prior written approval of BP.

You agree to take your instructions from only me, from other lawyers in my firm, from Brian Israel or other lawyers in the Arnold & Porter law firm, and from Donna Ward or other in-house counsel at BP (collectively “BP Attorneys”).

This Retention Agreement governs the terms of your engagement, but it does not authorize the performance of any particular tasks. Particular tasks will be authorized in writing by BP Attorneys. BP will not compensate you for any services that are not performed pursuant to a written authorization to perform a particular task. (Milner 2010:1)

The contract requires that the researcher “maintain the strict confidentiality of such non-public communications and information” and also prohibited publication of research findings until after three years;

...you may publish and provide to the public written research papers, presentations and similar documents concerning data relating to the BP NRDA Services after the earlier of the two following dates: (1) three years after the date of your execution of this Retention Agreements or (2) the date that the NRDA Restoration Plan, is complete and approved as final for the NRDA Restoration Implementation Phase. (Milner 2010:3)

In the event of termination of the Retention Agreement, the researcher must;

...agree to cooperate with the BP Attorneys in terminating or transferring any task on which you may be working and deliver to BP Attorneys the entirety of your files related to this matter. In addition, you agree to maintain the confidentiality of communications and information as provided in Paragraph 6 above. (Milner 2010: 2)

Contractual control such as this ensured that scientists who might accidentally produce research negatively implicating BP would be not only deterred, but legally barred from bringing this evidence to public light.

According to testimony from Garret Graves, the chair of the Coastal Protection and Restoration Authority of Louisiana and a key official in Governor Bobby Jindal’s administration, BP exerted a disproportionate influence in assessing the environmental damage caused by the spill. Stressing the need to reverse the roles between the federal government and the responsible parties, he asserted that “From the beginning of this spill and continuing today, we have witnessed the Responsible Parties exercise excessive control over the response, assessment and recovery efforts” (Graves 2011). Although commending BP’s willingness to spend freely on response efforts, Graves (2011) argues that the current statutory and regulatory structure permits the responsible parties to direct the conditions of response efforts since they control the purse strings. What results, he states, is a modern day “Stockholm Syndrome” in

which responders come to sympathize with the responsible parties, while remaining financially captive by them.

As stipulated under the Oil Spill Pollution Act of 1990, documenting the impact of the spill and the extent of injuries occurs through the National Resource Damage Assessment (NRDA) which includes BP, Louisiana and other Gulf states as well as the National Oceanic and Atmospheric Administration (NOAA) and U.S. Fish and Wildlife Service. Such an assessment requires hundreds of millions of dollars and could take more than a decade to complete. Under the assessment for the Deepwater Horizon spill, funding is provided by an informal agreement between BP and the other Trustees. Graves (2011:5) argues, “In effect, BP has to sign off on our assessment activities before we can begin in order for those studies to be funded by BP.” This can result in two problems according to Graves (2011:5-6):

First, BP can delay in their review and approval of work plans thereby threatening the timely collection of ephemeral data. Second, BP can refuse to concur in assessments that are contrary to their legal interests or make funding contingent upon the elimination of assessment activities that they view as damaging to their case.

His suggestion to the National Commission investigating the oil spill is to create an independent science auditor to ensure that the NRDA process results in restoration that truly corresponds to the losses in the Gulf. Unfortunately, this suggestion came too little too late, as BP had already been paying scientists to conceal their results while in the process of litigation.

BP-NOAA Dispelling Oil Spill Myths in Schools

As if manipulating and censoring the findings of academic scientists was not enough, both BP and the federal government engaged in a propaganda campaign in the Gulf to convince students that the spill was being handled in an environmentally safe manner. In an effort to dispel “myths” about dispersants and the subsurface oil,

representatives from BP and NOAA conducted outreach programs at local schools in the Gulf. Using a ten-gallon fish tank filled with water, cooking oil, and dishwashing detergent, BP and NOAA attempted to simulate the properties of oil and the beneficial effects of chemical dispersants on spill cleanup. As documented in a report by

ProPublica:

[NOAA science support coordinator Gary Ott] had the children try to use eyedroppers to suck up the oil, simulating the inefficiency of skimmers. He had them use paper towels to simulate absorbent booms. And then he applied dishwashing detergent to the floating oil to break it down — simulating dispersants. Though he acknowledged the dispersed oil doesn't disappear and could hurt some fish species, Ott told the children that the chemicals were broken down within weeks by microbes, the *Courier* reported. He also assured the children that Gulf seafood was safe to eat. (Wang 2010a)

Moreover, in one demonstration students were asked questions about the oil spill by a BP representative, who rewarded correct answers with pens and hats bearing the BP logo. As explained by a spokesperson from BP:

“The primary purpose [of the demonstration] is to inform and educate students on the methods used to clean up the oil in the Gulf and the wetlands and marshes,” Janella Newsome, BP media liaison said in a press release. “It's also to dispel myths about dispersants, subsurface oil and seafood safety.” According to BP representatives, it won't be the last demonstration. “This is the first session of many going on,” Charles Gaiennie, a BP representative said at Oaklawn's library last week. “We are starting here in Terrebonne Parish with eighth grade because they are the first of school age kids that have a defined science class. We wanted to reach out to schools that are near communities that have been directly impacted by the oil spill, so Terrebonne was a good choice. There's a lot of information that's out there isn't current or accurate.” (as quoted in the *Tri-Parish Times*, cited in Wang 2010a)

Public outreach programs such as these are one of the many actions taken by BP in coordination with the federal government, to disregard, downplay and hide the scope of the environmental damage caused by the spill.

In an era of vanishing federal funds for research and education, private corporations have stepped in to fill the void by investing in private-public university partnerships. Part of a broader trend of oil industry funding for university research, in 2007 the BP-UC Berkeley \$500 million Biosciences Institute was created, paving the way for increased corporate control over alternative fuel research. Learning from this experience, after the Deepwater Horizon disaster BP established the Gulf of Mexico Research Initiative and pledged \$500 million towards research on damage assessment and restoration. Seeking to maintain ultimate control and authority over the research produced, BP approached academic scientists at universities in the Gulf region to conduct assessments of the damage. Yet by accepting this funding scientists were contractually obligated to receive review and approval from BP before their assessments could proceed and restrictions were placed on what research could be published. In this sense BP attempted to manipulate the findings of researchers and buy silence from the academic community about the devastating effects of the spill. Furthermore, BP in coordination with scientists from NOAA visited public schools throughout the Gulf region to give demonstrations dispelling the “myths” of chemical dispersants and downplaying their environmental harm. All of the efforts taken together suggest that BP in cooperation with government agencies, specifically NOAA and the Obama administration, engaged in deliberate efforts to manipulate, suppress and distort the effects of the spill, including a reliable estimation of the amount of oil.

Underestimation of the Flow Rate

The state-corporate battle to control scientific evidence surrounding the spill is epitomized by efforts to establish an accurate estimate of the amount of oil flowing from the Macondo well. BP’s attempts to discourage accurate estimations of the flow rate are motivated by the fact that their liability is directly affected by the amount of oil

and gas discharged. Under the 1972 Clean Water Act, companies can be held liable for every barrel of oil and gas spilled and a fine of \$1,000 for an accidental spill and up to \$4,300 for a spill resulting from “willful negligence” can be imposed. Thus, BP had a clear interest in suppressing attempts to produce accurate estimations of the flow rate from the Macondo well. As Juhasz (2011:58) argues, “For the entire length of the disaster, BP stifled the public’s ability to measure the size of the monster it had released in what appears to be a crass attempt to limit the size of its ultimate final payout.”

Yet it was not solely BP who sought to discourage accurate estimates, Obama administration officials in the National Oceanic and Atmospheric Administration (NOAA) as well as the Coast Guard, sought to stifle and discourage accurate estimations of the flow rate. Moreover, the federal government released decidedly low initial estimates which were not altered for nearly a month, despite evidence from academic scientists that suggested the size of the spill was far greater than reported.

After announcing the final official estimations of the amount and fate of the oil, the Obama administration eagerly claimed that the oil in the Gulf had “disappeared.” However, as non-governmental scientists documented, the oil persisted in the form of subsea oil plumes. NOAA officials initially denied and discredited the findings of university researchers, though as peer-review evidence mounted from the academic community, NOAA and the Coast Guard were forced to acknowledge that “ephemeral clouds” of oil were in fact lingering in the Gulf of Mexico.

Worst Case Discharge Scenario

The OPA 1990 requires that all operators of oil exploration, development and production facilities in the Outer Continental Shelf must have oil spill response plans (OSRP) reviewed and approved by the MMS. Known as a “Worst Case Discharge

(WCD) scenario,” the plan contains an estimation of the maximum flow rate of a hypothetical uncontrolled blowout lasting up to thirty days and attempts to outline what response assets would need to be mobilized to clean up the spill. Most deep water operators, including BP, maintain contracts with private oil spill response organizations that independently or collectively must be able to respond to the WCD laid out in the response plan. Furthermore, the OSRP must be in accordance with the National Contingency Plan and the Area Contingency Plans for the geographic region (U.S. Coast Guard 2011:27). While the Coast Guard is responsible for overseeing the oil spill response, it does not have the authority to approve OSRP, though it can review and comment on any OSRP they desire to. However, there is no evidence that the Coast Guard reviewed or commented on any OSRP in the recent past, including BP’s Macondo plan. Furthermore, Coast Guard employees who occupied prominent positions in the UAC or Incident Command during the incident admitted that they were unfamiliar with the OSRP process and had not reviewed BP’s response plan (U.S. Coast Guard 2011: 27-8)

As permitted by MMS regulations, the OSRP for Macondo (Mississippi Canyon Block 252) was actually the response plan for another exploratory well (Mississippi Canyon Block 462), which was determined to pose the greatest potential threat of all BP’s facilities (U.S. Coast Guard 2011:28). Although none of the variables in the calculation nor the methodology for the flow rate was included, “The daily flow rate for the hypothetical well release, considering an unobstructed open hole, predicted reservoir parameters, and other factors, was 250,000 barrels of oil per day” (U.S. Coast Guard 2011:28). In order to respond to a spill of this magnitude, BP’s OSRP contended that with the assistance of contracted oil spill response organizations it was capable of cleaning up 492,000 barrels of oil per day (bbls/day).

In addition to an OSRP, BP was also required to submit an exploration plan (EP) which included details on well casing, cementing and other technical details, that was reviewed and approved by MMS. Included within the exploration plan is a second WCD scenario. As the Coast Guard's (2011:28) review states:

BP indicated that if the Macondo well experienced an uncontrolled blowout, it would have an estimated rate of 162,000 barrels of oil per day, less than the WCD scenario covered by the BP OSRP. As such, BP was not required to supplement or revise any part of their OSRP in relation to the response strategy. Like the WCD scenario in the BP OSRP, no additional information was provided that could support or establish the predicted outflow, and the EP was approved without any additional information being required.

The WCD estimate of 162,000 bbls/day put forth in the exploration plan was the number provided to the Coast Guard early on in the response by MMS. The WCD was also given to the White House, the Department of Homeland Security and the National Oceanic and Atmospheric Administration. The public, however, was not informed of the WCD, despite frequent reference to it by responders (U.S. Coast Guard 2011:29). This raised questions as to what information the federal government had, compared to what it was publicly releasing.

BP's OSRP for the Macondo well, prepared by a Houston-based consulting firm specializing in emergency response planning, contains numerous glaring errors and omissions. As summarized by the National Commission (2011:133):

If BP's response capacity was underwhelming, some aspects of its response plan were embarrassing. In the plan, BP had named Peter Lutz as a wildlife expert on whom it would rely; he had died several years before BP submitted its plan. BP listed seals and walrus as two species of concern in case of an oil spill in the Gulf; these species never see Gulf waters. And a link in the plan that purported to go to the Marine Spill Response Corporation website actually led to a Japanese entertainment site.

The National Commission (2011:84) also noted:

For instance, the BP plan identified three different worst-case scenarios that ranged from 28,033 to 250,000 barrels of oil discharge and used identical language to “analyze” the shoreline impacts under each scenario. To the same effect, half of the “Resource Identification” appendix (five pages) to the BP Oil Spill Response Plan was copied from material on NOAA websites, without any discernible effort to determine the applicability of that information to the Gulf of Mexico. As a result, the BP Oil Spill Response Plan described biological resources nonexistent in the Gulf—including sea lions, sea otters, and walruses.

Due to the distance of the Macondo well from the shore, the response plan states that oil wouldn’t reach the shoreline. Furthermore, the plan also makes the ridiculous claim that an oil spill wouldn’t have any adverse impacts on birds, sea turtles, and other endangered marine animals (Mohr, Pritchard and Lush 2010). Within a little more than a week it became clear that BP’s response plan had drastically underestimated the threat posed by a WCD.

Yet the National Commission’s report is quick to point out that the absurdities found in BP’s OSRP are not unique. In fact, as the National Commission (2011:133) asserts:

Congressional investigation revealed that the response plans submitted to MMS by ExxonMobil, Chevron, ConocoPhillips, and Shell were almost identical to BP’s—they too suggested impressive but unrealistic response capacity and three included the embarrassing reference to walruses.

The identical response plans for each of the different companies was prepared by the same contractor who prepared BP’s OSRP for the Macondo well (2011:84). Without any additional scrutiny from MMS or any other federal agency, BP’s OSRP, and all its errors, was approved without incident.

Government Estimations

In the aftermath of the spill, numerous estimates of the amount of oil flowing from the Macondo well were given by different government agencies that drastically

underestimated the size of the spill. Coast Guard officials and other responders consistently maintained that the low estimations did not hamper their efforts since the response was based on a WCD scenario. However, the inaccurate spill estimations fueled public fear and mistrust that the government did not fully understand the scope of the disaster and was unprepared to handle it.

For the first month of the spill, government officials and responders issued and adhered to low and inaccurate spill estimates. During this time, non-governmental scientists were able to use the scant amount of publicly available data to generate far more accurate estimates of the actual amount of oil. As the National Commission (2010a:1) states:

By initially underestimating the amount of oil flow, and then, at the end of the summer, appearing to underestimate the amount of oil remaining in the Gulf, the federal government created the impression that it was either not fully competent to handle the spill or not fully candid with the American people about the scope of the problem.

Despite the initial contention that no oil was leaking from the well, early Coast Guard logs reveal that the government was aware that they were dealing with a spill as large as 8,000 bbls/day within hours of the explosion on April 21, 2010 (Solomon and Mehta 2010). Furthermore, it appears that by April 23 the Coast Guard, along with the White House, was aware that the spill was far larger. According to the National Commission (2010a:8-9):

Soon after the spill began, frontline Coast Guard personnel requested worst-case discharge information from the Minerals Management Service and BP, both of which reported a figure of 162,000 bbls/day (the worst-case estimate from BP's original drilling permit). A high level official, however, told us that the Coast Guard did not believe the figure from the drilling plan was a credible worst-case estimate. On April 23, 2010, the Coast Guard and NOAA received an updated estimate of 64,000-110,000 bbls/day, which appeared in both an internal Coast Guard Situation Report and on a dry-erase board in the NOAA Seattle war room. By early May, BP had lowered its worst-case

estimate to 60,000 bbls/day. BP officials disclosed a similar estimate to Congress on May 4, 2010, stating during a briefing that the “maximum estimated flow would be 60,000 barrels a day, with a mid-range estimate of 40,000 barrels a day...”

Despite early awareness within the federal government that the spill was much larger, this knowledge was hidden from the public. While Unified Command might have been gearing its response efforts to numbers of this magnitude, the worst-case discharge scenario numbers were never publicly disclosed.

Furthermore, it appears that there may have been conflict within the federal government over whether and when to release the worst-case discharge figures. As uncovered by the National Commission (2010a:10), orders to stem the flow of information to the public may have come from the White House:

The decision to withhold worst-case discharge figures may have been made above the operational level. It is the understanding of the Commission staff that the possibility of releasing the worst-case discharge figures was at least discussed at the Unified Command level. The Commission staff has also been advised that, in late April or early May 2010, NOAA wanted to make public some of its long-term, worst-case discharge models for the Deepwater Horizon spill, and requested approval to do so from the White House’s Office of Management and Budget. Staff was told that the Office of Management and Budget denied NOAA’s request.

It therefore seems that pressure was coming directly from the White House to limit public knowledge of the size and scope of the spill.

The organization Public Employees for Environmental Responsibility (PEER) also raised objection to a “gag order” on NOAA scientists forbidding them to speak about the spill. A March 2007 Bush Commerce Department administrative order governing public communications “...forbids scientists from disclosing information that has not been approved by the chain-of-command, even if they prepare it and deliver it on their own time as private citizens” (Public Employees 2010). This replaced an “open science” policy previously held by NOAA and passed in 2006. In

addition, NOAA further restricts academic researchers who receive its Sea Grants from engaging in any “advocacy” activities (Public Employees 2010).

Government estimates- publicly disclosed

In an initial attempt to investigate if the well was indeed flowing oil and if so, how much, BP employed remotely operated vehicles to investigate the immediate wellhead area. On April 23, 2010, Coast Guard Rear Admiral Mary Landry (the Federal On-Scene Coordinator, the ranking federal official on the response team at the time) announced that there was no oil leaking from the well or the riser. Although at that time, the riser had yet to be inspected and the leak in the riser was not discovered until the next day. Following the discovery of two leaks in the riser, the Coast Guard in collaboration with BP announced that up to 1,000 barrels of oil per day were flowing from the two leaks. According to the National Commission (2010a:3), “Neither the Coast Guard nor BP divulged the data or methodology behind this estimate. Based on the information we have to date, it appears the figure came from BP without supporting documentation.”

By the second week of the spill, Admiral Landry announced on April 28, 2010 that the estimate had increased to up to 5,000 bbls/day based on a document from a scientist from NOAA. While not made public at the time, an internal NOAA email indicated that “The scientist also verbally noted to the Scientific Support Coordinator that the flow rate might be upwards of 10,000 bbls/day” (U.S. National Commission 2010a: 4, Footnote 14). This new figure was made using visual data including the “Bonn Convention” method which relies on aerial data to estimate the scale of the spill, and the color to estimate the thickness in order to calculate the volume. Admittedly a “very rough estimate,” the updated NOAA approximation did not take into account the oil that was leaking from the kink in the riser, thereby rendering it

imprecise. Nonetheless, the scientist's "...stated intent in disseminating the estimate was to warn government officials that the flow rate was multiple times greater than 1,000 bbls/day" (2010a:4). Even though it was acknowledged that the NOAA estimates might be inaccurate and that other techniques were being used to attain more accurate estimations, the government continued to maintain that official flow rate was 5,000 bbls/day until May 27, 2010 (2010a:4).

The Flow Rate Technical Group

As confusion and uncertainty over the flow rates dragged on, the public began to increasingly doubt the federal government's response efforts and their capability of handling the spill. In an effort to assert its authority, the Unified Command was prompted to create an interagency Flow Rate Technical Group (Flow Rate Group) on May 19, 2010 to generate a preliminary flow rate as soon as possible, and a more reliable final estimation within two months. Director of the U.S. Geological Survey Dr. Marcia McNutt was appointed to lead the Flow Rate Group on May 23. While the group from the USGS also relied upon the assistance of non-governmental scientists, what came to be the official estimates were principally due to the efforts of Department of Energy Secretary Dr. Steven Chu and a team from the Woods Hole Oceanographic Institute. The Commission Staff take care to mention that, "It is worth noting now, however, that the Flow Rate Group did not succeed in releasing an accurate high-end estimate until mid-June and that Secretary Chu's team, rather than any of the Group's teams, appears to have been responsible for the accuracy of that June 15 estimate" ("Staff Working Paper No. 3" 2010:15).

In total, the Flow Rate Group issued three estimations, though an accurate one was not produced until mid-June. Published on May 27, 2010 and clarified on June 2, the first report estimated "a range of lower bounds" of 12,000 to 25,000 bbls/day but

declined to speculate on a range of higher bounds due to “unknown unknowns” and also failed to elaborate on how the numbers were reached. The reason for the lack of explanation stems from a misleading press release that was based on a brief report, not reviewed for scientific accuracy, and was not representative of FRG views (McNutt 5-29-2010). Although it was not reported at the time, there was conflict within the FRG over whether to release higher estimates. According to Juhasz (2011:84), the National Oil Spill Commission staff learned “...that the team members had produced maximum estimates, several of which were in excess of 50,000 barrels of oil a day, but these amounts were not made public. Further, the team’s original report revealed some divergence of opinion, but these were omitted from the public version.” A revised estimate was then released on June 10, which raised the number from 25,000 to 30,000 bbls/day, with a lower bound of 20,000 and an upper bound of 40,000 bbls/day (“Staff Working Paper No. 3” 2010:12).

One explanation for the conflict over flow rate estimates is that members of the Plume Team from the Flow Rate Group experienced pressure from the White House which sought to downplay flow estimates. In an email on May 29, 2010 from USGS Director and leader of the FRG Marcia McNutt to the Plume Team, she expresses “what a nightmare it’s been” dealing with the White House, Department of Interior and the National Incident Command in communicating an accurate flow rate estimate.

Let me give you a flavor of some of the “suggestions” I was getting from the NIC and from the communications people at the White House and DOI as recently as yesterday afternoon as to how to “simplify” our bottom line:

From a NIC Admiral: How about just saying that the range of flow rates is 12,000 to 25,000 barrels per day? (No, because the 25,000 is a LOWER bound, not an UPPER bound....)

From a White House communications person: How about saying that several lines of evidence suggest that the flow is 12,000 to 19,000

barrels per day but that the rate could be as high as 25,000 barrels per day? (No, because the 25,000 is a LOWER bound, not an UPPER bound...). (McNutt 2010)

It seems as though administration officials were incapable of grasping the concept of a “lower bound,” instead confusing it as an upper estimate of the flow rate. McNutt also notes that the media did little to understand the differences in the numbers and the ramifications of lower versus upper bounds (McNutt 2010).

There have also been allegations made by the Public Employees for Environmental Responsibility (PEER) of scientific and research misconduct on behalf of NOAA Senior Scientist Dr. William Lehr in his capacity as leader of the Plume Analysis Team of the FRG.

Evidence uncovered by PEER shows that Dr. Lehr engaged in coercive manipulation of the Plume Team’s scientific activities, fabricated and falsified the scientific findings of the Plume Team, and prevented members of the Plume Team with conflicting findings from communicating their findings to key decision makers. (Public Employees 2011).

As a result of Dr. Lehr’s actions, the Plume Team’s numbers were underestimated by fifty percent and gave the public a misleading impression of the flow rate. Based on the emails of Plume Team members complaining that their results had been suppressed, manipulated and misrepresented, PEER concluded that Lehr’s actions were undertaken to satisfy the demands of the White House and the National Incident Command. As a result of Dr. Lehr’s efforts, any penalties and damages that BP could be held liable for are cut in half by underestimating the flow rate by fifty percent (Public Employees 2011).

Secretary Chu and the Woods Hole Oceanographic Institute estimates

After placing a sensor on the well to measure the flow rate, on June 15, 2010, Secretary of Interior Ken Salazar, a team of scientists from the Department of Energy

led by Secretary Dr. Steven Chu, and the Flow Rate Group announced a new estimate of 35,000 to 60,000 bbls/day. As the National Commission (2010a:14) explains:

On June 14, 2010, Secretary Chu and his team, Secretary Salazar, and members of the Flow Rate Group hosted a conference call. On the call, the teams decided that they would jointly announce a flow-rate range of 35,000-60,000 bbls/day. The Chu team's estimate accounted for the high end of the range, while the Flow Rate Group's work provided the low end.

By August 2, however, the high end of the estimation produced by Dr Chu's team had proved to be more accurate as the number was once again modified to 62,000 bbls/day at the outset of the spill. It was also noted that the flow rate was reduced to 53,000 bbls/day by the time the well had been capped on July 14, 2010 (U.S. National Commission 2010a:14).

Based on these numbers, Secretary Chu's team and the Flow Rate Group concluded that the total amount of oil discharged throughout the spill was 4,928,100 barrels (+ or – 10%), giving a range of 4,435,290 to 5,420,910 total barrels. These final estimations were released to the public in a report titled *Deepwater Horizon MC252 Gulf Incident Oil Budget* published by the NOAA and have remained the official estimates of the total amount of oil (U.S. National Commission 2010a:15). *Independent Oil Spill Estimates*

The first independent flow rate estimation was released on April 27, 2010 and was being reported in the national press within days. Using publicly available satellite imagery, founder of SkyTruth.org John Amos estimated the size of the leak to be 5,000 to 20,000 bbls/day. This estimate was assumed to be conservative since it did not take into consideration oil that had been burned or collected by response crews, had been evaporated or dispersed, or was below the surface. Shortly thereafter on May 1, 2010, Florida State University oceanographer Dr. Ian MacDonald published a new estimate based on a Coast Guard map that tracked the spills surface size and

color. Using the Bonn Convention method, he estimated the flow rate to be 26,500 bbls/day. This too was a conservative estimate as it did not factor in oil that had been cleaned up or that was not visible from the surface (U.S. National Commission 2010a:5).

On May 12, 2010, BP released the first thirty second video of oil bellowing from the end of the riser which provided a valuable piece of data about the flow rate. Congressman Markey pushed BP to make publicly available 24 hour footage of the spill and on May 20, BP complied. As Juhasz (2011:83) describes the impact of the video:

The effect of the spill cam on the public psyche was profound. Within the first twenty-four hours of Congressman Markey's posting the link, hundreds of thousands of people visited the subcommittee's Web site. Perhaps because it just made such good television, the video footage opened morning news programs and closed out the nightly news. The public was riveted, and the demand for better information and action grew accordingly.

Within 24 hours of the video being released, using various methodologies, three independent scientists had developed new estimates on the total flux (the total amount of oil and gas coming out of the well) being released from the riser that were much greater than the government estimates. These estimates did not include the amount flowing from the kink leak since no public data was available at the time. Dr. Timothy Crone, a marine biologist at Columbia University's Lamont Doherty Earth Observatory, estimated the total flow to be 50,000 to 100,000 bbls/day based on a technique called Optical Plume Velocimetry. An expert on orders of magnitude estimation, Dr. Eugene Chiang, an astrophysicist at the University of California at Berkeley estimated the amount to be 20,000 and 100,000 bbls/day. Specializing in fluid mechanics, Dr. Steven Wereley, a mechanical engineer at Purdue University estimated the flow to be 72,179 bbls/day using a method called Particle Image

Velocimetry (U.S. National Commission 2010a:6). As the National Commission (2010a:7-8) conclude, “The government appears to have taken an overly casual approach to the calculation and release of the 5,000 bbls/day estimate- which, as the only official estimate for most of May, took on great importance.”

NOAA Report: Oil has “Disappeared”

On June 11th the National Incident Commander requested that a tool be developed to document the effectiveness of all skimming, burning, source capture and dispersant application operations. This team of experts from NOAA, the National Institute of Science and Technology, and the USGS was divided into two teams. The first team led by Secretary Chu and USGS Director Marcia McNutt, attempted to estimate the total flow rate from the well. The second team, led by the Department of Interior and NOAA, created the *Oil Budget Calculator* to determine what happened to the oil. Also playing a leading role in the *Oil Budget Calculator* is NOAA Senior Scientist Dr. William Lehr who has been alleged of scientific misconduct for underestimating the Flow Rate Group estimations.

The Oil Budget Team determined the official, total, and final flow rate was determined to be 4.9 million barrels. “The Oil Budget provided to be the first public estimate of the amount of oil discharged over the course of the spill (April 22 to July 14, 2010), a total of 4,928,100 barrels (+ or – 10%, which gives a range of 4,435,290 to 420,910 total barrels) (U.S. National Commission 2010a:18). According to the U.S. National Oceanic and Atmospheric Administration (2010), by August much of the BP oil had evaporated or disappeared:

In summary, it is estimated that burning, skimming and direct recovery from the wellhead removed one quarter (25%) of the oil released from the wellhead. One quarter (25%) of the total oil naturally evaporated or dissolved, and just less than one quarter (24%) was dispersed (either naturally or as a result of operations) as microscopic droplets into Gulf waters. The residual amount — just over one quarter (26%) — is either

on or just below the surface as light sheen and weathered tar balls, has washed ashore or been collected from the shore, or is buried in sand and sediments. Oil in the residual and dispersed categories is in the process of being degraded.

Released to the public prematurely before proper scientific review, responders argued that the initial findings were an estimate for operational purposes, not a definitive account of what happened to the oil. Nonetheless, that is exactly how they were interpreted as these estimations have become the permanent, final accounts of the amount and fate of the oil.

The unveiling of the *Oil Budget* at a press conference on August 4, 2010 coincided with Admiral Allen's announcement that the static kill efforts had succeeded and was intended to be a high profile event attended by numerous Obama administration officials including Jane Lubchenco (Administrator of NOAA), Carol Browner (Director of the White House Office of Energy and Climate Change Policy), and Robert Gibbs (White House Press Secretary). That morning Carol Browner appeared on all the major news networks to proclaim the success of the government's response efforts. As the National Commission (2010a:20) recounts of the broadcasts:

Ms. Browner did not describe the Oil Budget as an operational tool designed to assist responders. Instead, some of her statements presented the budget as a scientific assessment of how much of the oil was "gone":

"I think it's also important to note that our scientists have done an initial assessment, and more than three-quarters of the oil is gone. The vast majority of the oil is gone."

"The scientists are telling us about 25 percent was not captured or evaporated or taken care of by mother nature."

Reports such as these appeared to be a premature assessment and scientists argued that it gave a misleadingly optimistic impression about the fate of the oil. Nonetheless,

the Oil Budget and the explanation for what happened to the oil continued to remain the federal government's official account of the spill.

Where did the Oil Go? Oil Plumes Discovered by Independent Scientists

An alternative answer to the question “where did all the oil go?” was soon provided by the ocean sciences academic community. The initial discovery of giant oil “plumes” floating beneath the surface of the Gulf was made by a team of scientists from multiple universities aboard the NOAA supported Pelican research vessel on May 3. The team found multiple plumes, though one cloud of dispersed oil one as large as 10 miles long, 3 miles wide and 300 feet thick in certain areas (Gillis 2010).

According to Juhasz (2011:76):

During its two weeks at sea, the *Pelican* identified three of these plumes; they were both deep and giant. They were found at roughly 2,200 feet, 3,280 feet, and 4,260 feet below the ocean's surface. The largest was 15 miles long, 5 miles wide, and 300 feet thick in spots. That is 5,100 times the volume of the Superdome, or about half the volume of Utah's Great Salt Lake.

The crucial discoveries of the Pelican team were made public when one of the scientists involved, Dr. Samantha Joye, contacted *New York Times* reporter Justin Gillis in response to criticisms that NOAA and other scientists were not doing enough to gather independent data. After running the story “Giant Plumes of Oil Found Under Gulf” which stressed the findings were preliminary, the story exploded, reaching the public and policymakers.

Initially, both BP and NOAA sought to deny and discredit the findings of the Pelican and the existence of oil plumes, even before reviewing the data. Upon arriving back to shore on May 16, 2010 the researchers on board were asked by NOAA to stop talking to the press. “On May 17, NOAA administrator Jane Lubchenco issued the following statement: ‘Media reports related to the research work conducted aboard

the R/V *Pelican* included information that was misleading, premature and, in some cases, inaccurate” (Juhasz 2011:80). On June 13, NOAA issued a statement stating that the researchers did not comply with EPA guidelines, thereby invalidating the data. Thus, the findings of the *Pelican* would not be used. Moreover, the scientists aboard were lambasted and discredited by NOAA and the Coast Guard (Juhasz 2011:82). As Juhasz (2011:82) cites Dr. Joye, who alerted the media to the *Pelican*’s findings:

“Everyone involved in the *Pelican* plume discovery got their hands slapped and were asked to ‘stand down’ and not respond to media requests,” she told me. She believes this is because NOAA, “wanted to control the flow of information.” Some scientists—Dr. Joye is not saying who—have even had their federal funding threatened, which is no small matter, given that this is a main source of funding for oceanographic research. “They told us, ‘We’re not trying to tell you what to say...we’re just asking you to temper your statements, not to be inflammatory.”

Following the *Pelican*, other researchers from the University of South Florida in Saint Petersburg went aboard the *Weatherbird II* to study the spill twice in May where they also identified low concentrations of oil from the Macondo well located in deep underwater plumes. As cited by Schrope (2010:682):

But the *Weatherbird II* team had its own challenges with NOAA. Representatives from the agency and from BP travelled with the scientists on their first boat trip, and much of the work was carried out as part of the government’s Natural Resource Damage Assessment (NRDA) process for gathering evidence that might be used in future spill liability cases. The NRDA process is a foreign one to many scientists because there are restrictions on how samples and data are handled.

Following the voyage, the samples were turned over to NOAA and the academic researchers were unable to analyze most of the sample collected.

Similarly, University of South Florida marine sciences dean William Hogarth was criticized by federal officials upon announcing his findings of a six mile wide oil plume in the Gulf. He stated, “I got lambasted by the Coast Guard and NOAA when

we said there was undersea oil.” After being pressured to retract his public announcement, Hogarth compared it to being “beat up” by federal officials (Wang 2010b).

The findings of the Pelican were not isolated and were supported by the work of other independent researchers. Led by Dr. Richard Camilli, a team from the Woods Hole Oceanographic Institute also found oil plumes during their research mission between June 19 and 28, 2010. They identified “...a continuous plume of highly diffuse hydrocarbons 35 kilometers long, 200 meters high, and 2 kilometers deep, at a depth of approximately 1,100 meters” (U.S. National Commission 2010a:24). In addition to confirming that the oil was indeed from the Macondo well, the team also indicated that the plume likely stretched longer than 35 kilometers, which was restricted by the boundaries of the study. Furthermore, the researchers were unable to find evidence of “systematic oxygen drawdown” which suggested that rapid biodegradation might not be occurring as suggested by the NOAA Oil Budget.

Learning from the experience of the Pelican crew, the Camilli et al. team did not go public with their findings until they were first published in the peer-reviewed journal *Science* on August 19, 2010 in an effort to gain legitimacy and avoid conflict with the administration. It was not until the published findings of Camilli et al. (2010) that NOAA publicly acknowledged the existence of they referred to as “ephemeral clouds” of oil, estimating that as much as 42 million gallons of oil could lay beneath the surface in this form.

In congruence with the findings of the Pelican, Weatherbird II, and Camilli et al (2010), another research team led by Terry Hazen from Lawrence Berkeley National Laboratory also found evidence of oil plumes floating in the Gulf and published their findings in a peer-reviewed article on August 4, 2010 in *Science Express*. Diverging

from the other studies, the Hazen et al. team identified slight oxygen drawdown and concluded that the biodegradation rates for hydrocarbons was occurring more rapidly than expected (U.S. National Commission 2010a:25). These findings led many to believe that the missing oil in the Gulf was being quickly broken down by oil eating microbes, including reports such as “Microbes ate BP oil deep-water plume: study” (Zaberenko 2010). The study claimed that rather than being harmed by the massive spill, the microbes were actually stimulated. So efficient were the microbes, Hazen et al. (2010) claimed, that the deepwater oil plume was now undetectable. Perhaps one reason for the overly rosy picture painted by Hazen et al. compared to the other research teams can be found in the source of funding for its sponsor, the Lawrence Berkeley National Laboratory which is provided by BP. While BP funding for the Hazen et al. study is not explicit, the connection is at least one explanation for the overly optimistic findings that oil eating microbes had devoured the oil plumes.

Months after the capping of the well and the release of the *Oil Budget*, independent scientists continued to find evidence that the oil did not just disappear, but rather sank to the bottom of the ocean. By September 14, 2010, Dr. Samantha Joye and a research team from University of Georgia discovered nearly two inches thick of oil on the Gulf floor, smothering dead shrimp, crab and other marine life. It was confirmed that the oil originated from the Macondo well. Furthermore, their research supported the findings of a team from the University of Florida led by Dr. David Hollander who had found droplets of oil in marine sediment in the DeSoto Canyon, an underwater fissure running along the ocean floor in August (Burdeau and Borenstein 2010).

The findings of the academic research teams were essential in forcing the government to publicly acknowledge the harsh realities of the environmental effects of

the spill. As the National Commission (2010a:27) acknowledged:

Perhaps to some extent as a consequence of these early findings, government officials have changed the tone of their public statements on the fate of the oil. For example, on September 15, 2010, Administrator Lubchenco acknowledged that oil is being found on the seafloor and promised that the government “will continue to monitor, sample and study the oil and [dispersants] from the near shore to the open ocean, from the surface to the seafloor . . . mindful of the need to understand how much oil remains, where it is and in what concentrations and how rapidly it’s being naturally degraded.”

As the efforts of independent scientists made clear, BP’s oil did not simply disappear as government scientists were swift to claim in NOAA’s *Oil Budget*. Since the oil was no longer visible from the surface government officials attempted to persuade the public that problem had been effectively resolved: Out of sight, out of mind.

It was not until November 23, 2010 that the government released a revised, peer-reviewed document that explained that the *Oil Budget* was intended to be an operational tool, not to assert the final fate of the oil. Yet this is exactly what the *Oil Budget* achieved by providing fixed amounts, without leaving much room for uncertainty. The *Technical Document* clarification stressed the uncertainty of the numbers provided in August, but little to modify them. Perhaps the most significant change was an increase in the amount of oil classified as “chemically dispersed” from 8% to 16%. Furthermore, the updated document dismissed the September reports that thick oil was found on the surface of the sea floor (Ramseur 2010).

Conclusions

In the state-corporate response to the spill, one of the major goals of BP and the Obama administration was to suppress and manipulate scientific evidence of the environmental devastation unfolding in the Gulf of Mexico. As other analyses of partnerships between the oil industry and universities have demonstrated, Big Oil has

often disregarded the peer review process, assumed control of academic governing bodies, managed research proposal selection and monopolized the results of academic research. Similarly, BP also sought to dictate the terms of scientific evidence through the Gulf of Mexico Research Initiative as a means of concealing their environmental crimes. While many Gulf Coast scientists were reluctant to relinquish control of their research to BP, those who accepted the funding were contractually obligated to receive prior review and approval from BP and its lawyers before they could proceed with their assessments or publicly release their findings. BP's financial and legal control over the fund ensured that any negative findings could be kept quiet while the company's liability was still in question.

Not only was BP working to distort scientific evidence surrounding the spill, but a major objective of the federal government was also to downplay and manipulate scientific evidence surrounding the amount and fate of the oil. From the outset of the spill, the Coast Guard and the Obama administration severely underestimated the size of the oil spill to the public, despite information suggesting that they knew the size was far greater. Even in the face of much higher estimates from independent scientists, the federal government was reluctant to release more accurate measures. With increasing federal oversight of response efforts, the Obama administration created the Flow Rate Group as well as the Woods Hole research team led by Secretary of Energy Steven Chu as a means of establishing an authoritative estimate. The Flow Rate Group experienced pressure from officials at NOAA, the White House, the DHS and the Unified Command to downplay the size of the spill. Moreover, acting on pressure from the Obama administration to limit spill estimates, a senior scientist from NOAA on the FRG went as far as to deliberately obscure the team's findings thereby leading to their public discrediting. Without critical speculation about his qualifications for the

job or his past relationship with BP, Secretary Chu led the team which produced the final, official flow rate from Macondo. Appointing Dr. Chu to lead the Woods Hole team provided the Obama administration with the means to influence the determination of the flow rate.

The announcement of the official flow rate in NOAA's *Oil Budget* gave the Obama administration the opportunity to declare that much of the oil had disappeared from the Gulf due to the success of response efforts. At the same time, a growing body of peer reviewed evidence identified massive oil plumes lurking below the ocean's surface, yet the Obama administration, NOAA and the Coast Guard tried to ignore and discredit their findings. Ultimately, the independent scientists were victorious in their battle for recognition as NOAA was forced to acknowledge the large conglomerate masses of chemically dispersed oil lingering in the Gulf.

Even two years later, BP has continued to manipulate scientific evidence by contesting the official flow rate as a means of limiting their financial liability for the spill. Academic scientists from the Woods Hole Oceanographic Institute Dr. Christopher Reddy and Dr. Richard Camilli (2012) were forced to reluctantly give BP access to over 3,000 private emails concerning the calculation of the flow rate. As a result of a federal court case in which the scientists were not involved, BP has subpoena all information surrounding the researchers' calculations. In response, Reddy and Camilli provided the company with 50,000 pages of documents, raw data, reports, and algorithms used in their research yet BP further pushed for access to their private communications.

Noting a lack of law and legal precedent to protect independent scientists, Reddy and Camilli (2012) fear the erosion of the scientific deliberative process by powerful corporations. Moreover, the researchers also express concern about

intellectual property on cutting edge subsea surveillance technology (which is highly desirable information within the offshore industry) being unveiled as a byproduct of releasing their emails. In the end, Reddy and Camilli (2012) conclude that this federal ruling sets a disturbing legal precedent for corporate power and scientific deliberation:

Ultimately this is not about BP. Our experience highlights that virtually all of scientists' deliberative communications, including e-mails and attached documents, can be subject to legal proceedings without limitation. Incomplete thoughts and half-finished documents attached to e-mails can be taken out of context and impugned by people who have a motive for discrediting the findings. In addition to obscuring true scientific findings, this situation casts a chill over the scientific process.

Academic researchers beware: Scientific misconduct by corporations and governments has become an increasing means of concealing environmental harm.

CHAPTER SEVEN: CONCEALING THE DAMAGE

Limiting the visibility of the oil was a primary objective of the state-corporate war against the Macondo well. Chemical dispersants applied at both the surface and directly at the wellhead were the primary weapons to prevent the oil from reaching the shore. As the amount of toxic dispersants reached unprecedented levels, the Environmental Protection Agency unsuccessfully tried to force BP to reduce its use of dispersants, but the Coast Guard allowed the company to continue unabated. In this regard, both BP and the Coast Guard worked together to conceal the oil and the extent of the environmental damage.

Government and industry alike had learned from the 1969 Santa Barbara and 1989 Exxon Valdez spills the power of images to incite public reaction. Once the oil had made landfall, photographs of oil soaked brown pelicans tugged at the heart strings of the American public. In response, BP and Unified Command worked to censor images of the Gulf by instituting and policing a 65 foot zone around all cleanup workers, equipment and animals. Closely coordinated with one another, BP hired private security contractors which worked alongside the Coast Guard, Department of Homeland Security and local law enforcement to enforce the media blockade. In addition to censoring images, BP went as far as to deliberately alter official images of the response to give the appearance that it was more active than it actually was. Taken together, all of these actions suggest a coordinated campaign led by BP and supported by the Obama administration to censor images and information surrounding the 2010 Gulf of Mexico spill.

Environmental Warfare: The Use of Chemical Dispersants

In an act of environmental warfare, chemical dispersants were used without restraint to hide the amount of oil spewing from Macondo. Government and corporate officials alike continuously drew analogies between efforts to contain the well and warfare against the oil. Ultimately, the war on Macondo was fought through an extensive, untested application of dispersants both to the surface and at the wellhead itself. Designed to change the form though not the quantity, dispersants break oil into small droplets which lingered in the form of oil plumes beneath the surface of the Gulf. Despite less toxic and more effective dispersant options, BP insisted on deploying Corexit made by Nalco, who maintained corporate ties with BP. Exemplifying the power relations throughout the response, when the EPA and the Coast Guard attempted to restrain BP, the company refused and persisted in its surface and subsea application of dispersants. Achieving the intended effect, the use of dispersants limited the amount of oil visible from the surface and postponed a realization of the true extent of the damage done to the Gulf of Mexico.

Early on in the response, BP Group Chief Executive Tony Hayward declared “We are attacking this spill on two fronts – at the wellhead and on the surface offshore” (BP 2010). This type of language persisted and framed the response in militaristic terms. For example, in his speech to the nation addressing the ongoing catastrophe in the Gulf, President Obama also drew on the narrative of war:

Already, this oil spill is the worst environmental disaster America has ever faced. And unlike an earthquake or a hurricane, it’s not a single event that does its damage in a matter of minutes or days. The millions of gallons of oil that have spilled into the Gulf of Mexico are more like an epidemic, one that we will be *fighting* for months and even years. But make no mistake: We will *fight* this spill with everything we’ve got for as long as it takes. ... Tonight I’d like to lay out for you what our *battle plan* is going forward: what we’re doing to clean up the oil, what

we're doing to help our neighbors in the Gulf, and what we're doing to make sure that a catastrophe like this never happens again. (White House 2010, Emphasis added)

Obama even made connections between the war being fought by troops in Afghanistan compared to the “battle we’re waging against an oil spill that is assaulting our shores and our citizens” (White House 2010).

Once the well had finally been conquered on September 19, 2010, federal responders were quick to declare victory: “The Macondo 252 well is effectively dead,” retired Coast Guard Admiral Thad Allen, who has overseen the U.S. government's response, said in a statement. “We can now state, definitively, that the Macondo well poses no continuing threat to the Gulf of Mexico” (Hays 2010).

Analogies made by government and corporate officials stressed the urgency of the fight against the Macondo well and the necessity of taking immediate and unprecedented action against it. This rhetoric portrayed the Gulf of Mexico and its multiplicities of ecosystems as an identifiable enemy rather than a potential victim of response efforts. In a declaration of environmental warfare upon Macondo, BP and the federal government proceeded to “carpet bomb the Gulf” with an unprecedented amount of chemical dispersants.

In the fight against Macondo, BP and the federal government relied extensively on chemical dispersants. While acknowledging that the decision to use dispersants was the best option of two difficult choices, EPA Administrator Lisa P. Jackson clearly identified the enemy in this war:

But in all of this it is critical to remember the Number One enemy is the oil. Until we find a way to stem the flow of oil, we must continue to take any responsible action that will mitigate the impact of the spill. That is what we are doing. (Jackson 2010b)

As Federal On Scene Coordinator Admiral Landry told reporters:

“We have one-third of the world’s dispersant resources on standby... Our goal is to fight this oil spill as far away from the coastline as possible.” Faced with what one Coast Guard captain called a “tradeoff of bad choices” between spraying chemicals on the water or watching more oil reach the shore, responders would wield dispersants in the battle against oil for the next 12 weeks, using novel methods and unprecedented volumes. (U.S. National Commission 2011:143)

Defending the Coast Guard’s continued approval of dispersant use despite EPA’s attempts to restrict it, Admiral Allen acknowledged that at times “our leaders have had to make decisions on scene... Sometimes there was no other way to attack the oil than to use dispersants.” In a very poignant statement, Allen likened the struggle in the Gulf to what he called “the equivalent of an environmental war.” The application of chemical dispersants is perhaps best described by Congressman Edward Markey: “BP carpet bombed the ocean with these chemicals, and the Coast Guard allowed them to do it” (Ball 2010).

Dispersants are an established part of oil spill response operations that are designed to break up oil into microscopic droplets that then sink to the bottom of the ocean. By diluting the oil throughout the water column, dispersants only change the form of the oil, not the quantity. The goal is to reduce the amount of oil that reaches the shoreline in order to minimize the amount of harm to economically and environmentally sensitive areas. While sparing the animal life onshore, marine life living within the water column sustains greater harm due to dispersant use. Therefore, the decision to use dispersants is often viewed as a tradeoff between the immediate damage caused by concentrated oil washing ashore, versus the unknown long-term effects of oil dispersed throughout the water column. Importantly, the deployment of unprecedented volumes of chemical dispersants served the intended purpose of concealing the amount of oil visible from the surface and on the shoreline, therefore limiting BP’s liability.

In the cleanup effort, an unprecedented amount of dispersants were used. Over 1.84 million gallons of chemical dispersants were sprayed by plane, dumped by boat and injected directly at the wellhead. In comparison, the total amount of dispersants used during the Exxon Valdez spill was 5,500 gallons which was viewed as controversial at the time. Of the nearly two million gallons, 771,000 gallons were applied at the wellhead 5,067 feet below the surface. This “novel” use of dispersants had never been attempted, thus there was a lack of research on its potential hazards to marine life.

EPA-Coast Guard Approval of Dispersants

The decision to use dispersants is based on the idea of “net environmental benefit” which takes into consideration numerous factors including dispersant application rates, meteorology, environmentally sensitive areas, and potential for economic damage. However, government and corporate responders gave scant attention to the potential for environmental harm. The attitude towards dispersant use that prevailed among BP and the Coast Guard was best characterized by a statement from CEO Tony Hayward, “The Gulf of Mexico is a very big ocean. The amount of volume of oil and dispersant we are putting into it is tiny in relation to the total water volume” (as cited by the U.S. National Commission 2011:144). Indeed, the unleashing of an unprecedented amount of chemical dispersants created a giant science experiment in the Gulf.

There exists no comprehensive overarching national policy to guide dispersant use. At the time of the Macondo well blowout, the use of dispersants was determined by the Regional Response Team (RRT) IV (which includes Mississippi, Alabama and Florida) and RRT VI (Louisiana and Texas) had pre-authorized the use of dispersants for their areas of responsibility in waters deeper than 10 meters and at least three miles

away from shore without providing any limitations on the volume of dispersants used. One difference in policy between the two, RRT IV was co-chaired by the EPA and Coast Guard, whereas the FOSC was given authority for dispersant decisions in RRT VI. Moreover, neither RRT considered the use of subsea application of dispersants, only surface application by boat and by plane. Once the spill began, confusion arose between the RRTs, the Coast Guard and the EPA over who had authority over dispersant application.

Surface application of dispersants was undertaken by private contractors while oversight of these operations was managed by the Federal On Scene Coordinator (U.S. Coast Guard 2011:40-42). At the time, no federal agency had ever studied subsea dispersant use and private studies were very limited (U.S. National Commission 2011:144). Furthermore, while surface application of dispersants was clearly delegated to the RRT under the NCP, there was no clear jurisdiction on subsea applications and it was uncertain whether approval was needed from the EPA or NOAA. The confusion over what agency had regulatory jurisdiction concerning subsea use of dispersants later came to a head as public concern over this novel use of dispersants mounted.

The EPA maintains the National Product Schedule which authorizes dispersants and other chemicals to be used in response to an oil spill. It is the EPA's responsibility under the National Contingency Plan to obtain toxicity data from industry on each of the products before placing them on the list. Required toxicity tests only examined two sensitive species in the Gulf of Mexico, invertebrate (mysid shrimp) and fish (silverside), and are considered to be representative of many species living in the Gulf. The research on the toxicity and effectiveness of dispersants is sparse and inconsistent and the studies that do exist have been conducted by the

manufacturer, raising doubt about their accuracy. According to the National Commission (2011:144):

Under the terms of the preauthorization, Corexit was a permissible dispersant because EPA listed it on the National Contingency Plan Product Schedule. EPA obtains toxicity data from the manufacturer before placing a dispersant on that schedule. Some toxicologists have questioned the reliability and comparability of the testing by manufacturers. Moreover, the required testing is limited to acute (short-term) toxicity studies on one fish species and one shrimp species; it does not consider issues such as persistence in the environment and long-term effects.

On the whole, there was a lack of consistent, independent toxicity tests for Corexit and all other approved dispersants. Due in part to proprietary information, the ingredients of dispersants available for oil spill cleanup are not easily accessible and sometime unattainable. One report conducted a literature review of scientific research on the 57 chemical ingredients that were found in dispersants at the time of Deepwater Horizon. Of the 57 ingredients, five chemicals are associated with cancer; 33 chemicals are associated with skin irritation ranging from rashes to burns; 33 chemicals are linked to eye irritation; 11 chemicals are suspected of potential respiratory toxins or irritants; and ten chemicals are suspected kidney toxins. Furthermore, there is also an array of potential effects on the marine environment. For example, eight chemicals are suspected or known to be toxic to aquatic organisms and five chemicals are suspected to have a moderate toxicity to fish (Earth Justice 2011:3). Without definitive knowledge about the effectiveness and toxicity of Corexit and the available alternatives, both the EPA and BP were unable to make informed decisions about surface and subsea dispersant application.

Nalco's Corexit 9500 and 9527A

Out of the eighteen chemical dispersants approved by the EPA for use in oil spill clean ups, BP chose one of the most toxic- Corexit 9500 and 9527A, produced by

Nalco. According to the EPA's data, Corexit is more toxic and less effective than the other dispersants on the National Products Schedule (U.S. Environmental Protection Agency 2010a, 2010b). Nalco was specifically selected by BP to produce the dispersant and successfully mobilized one third of the world's total supply of dispersants to the Gulf of Mexico. Better known for its water treatment and processing technologies, Nalco's sale of chemical dispersants typically makes up less than one percent of the company's total profit. Nalco was formed in 1994 as joint venture with Exxon Chemical under the name Nalco/Exxon Energy Chemical and maintains strong connections with oil industry insiders through its board of directors, including executive board members at BP and ExxonMobil (such as Rodney Frank Chase, CEO at both Nalco and BP) (DuBois 2010).

Upon releasing the ingredients of Corexit to the EPA, Nalco attempted to downplay the toxicity of some of the chemicals by citing the many common household products they were also found in. For example, sorbitan, mono-(9Z)-9-octadecenoate was identified as also in skin cream, body shampoo, emulsifier in juice. Other chemicals noted were also found in baby bath, mouth wash, face lotion, tanning, cosmetic products, and household cleaning products (Nalco 2010). Despite the seemingly benign portrait of Corexit painted by Nalco, the dispersant has been banned for use in the United Kingdom due to its harmful effects.

During the battle over dispersant use, the EPA faced pressure from lawmakers and public health advocates who were concerned about the ingredients in Corexit kept secret from the public by Nalco. As the National Commission (2011:144) states:

Faced with high-volume dispersant use, Gulf residents became concerned that the chemicals were just as bad as the spilled oil itself. Some workers reported nausea and headaches after coming into contact with dispersants. However, OSHA found no evidence of unsafe dispersant exposure among responders. Environmental groups pressured Nalco, the company that manufactures Corexit, to disclose

its formula. Although it had given the formula to EPA during the pre-listing process, Nalco declined to make the formula public, citing intellectual property concerns. This decision did not reassure the citizens of the Gulf.

In a renegade move, the EPA publicly revealed the toxic dispersants contents on its website on June 9, without forewarning Nalco (Schor 2010b).

According to the statement from Nalco (2010) released by the EPA:

COREXIT 9500 is the sole product we have been making for Gulf responders since the spill began. Limited quantities of COREXIT 9527 may have been drawn from existing dispersant stockpiles from around the world. COREXIT 9500 does not include the ingredient 2-butoxy ethanol, an ingredient in COREXIT 9527.

The Corexit concoction contains propylene glycol and light petroleum distillates (refined from crude oil), and dioctyl sodium sulfosuccinate (a detergent and common ingredient in laxatives). Moreover, the 9527 formula contains 2-butoxyethanol in addition to propylene glycol (a commonly used solvent) and has been identified as a cause of persistent health problems of clean up workers following the Exxon Valdez. Despite the documented toxicity of Corexit, the EPA allowed it to remain on the National Product Schedule as an approved dispersant. In the wake of public pressure over the health effects of the dispersants the EPA released the ingredients, but the agency was ultimately unable to inhibit BP's unrestrained application of them.

Surface and subsea application of dispersants

Concerns over dispersant toxicity notwithstanding, BP and its contractors began applying dispersants to the surface on April 22, 2010. By April 26, 14,654 gallons of Corexit had been used. Dispersant use increased from April 27 to May 3, with responders applying 141,358 gallons to the surface. The following week, 168,988 gallons were applied. During the week of May 11 to May 17, the amount of surface dispersants reached 255,000 gallons (U.S. National Commission 2011:144).

Prior to the Deepwater Horizon disaster, dispersants had only been applied to the surface of an oil spill, never directly to the wellhead itself. At the suggestion of BP, responders began considering the “novel” use of subsea dispersants to break up the oil rather than waiting for it to rise to the surface. On May 1, 2010, Admiral Thad Allen announced that crews were testing dispersants directly at the wellhead using remote operated robots and that nearly 3,000 gallons of dispersants had been applied subsea (U.S. National Commission 2010b:7). By May 17, the cumulative totals were 580,000 gallons on the surface and 45,000 gallons subsea.

As time went on and the amount of dispersants being applied to the surface and the wellhead grew to unprecedented proportions, the public and the federal government became concerned about the amount being used. According to the Coast Guard (2011:42):

Even though pre-authorization of dispersant use was approved by RRT VI and implemented by the FOSC, over time, several concerns developed. These concerns involved the increasing volume of dispersants being used, the extended duration of dispersant application, the novel use of subsea injection of dispersants at the wellhead, and the potential toxicity of both the dispersants and the dispersed oil. These concerns caused the EPA to question the continued use of dispersants.

Within one week of subsea application, the EPA and the Coast Guard issued a directive which instructed BP to halt the subsea use of dispersants pending further testing.

Here, as the issue of dispersant application became more and more prominent in the media and for the public, the decisions to apply both surface and subsea dispersants were taken out of hands of the Regional Response Teams. Admiral Allen and Administrator Jackson to a large extent bypassed the National and Regional Response Team structures and instead issued decisions regarding dispersant policy through joint directives. Though this reflected the high level at which the issues were being evaluated, it was outside of the process that responders were supposed to implement. (U.S. National Commission 2010b:15-6)

A May 19, 2010 letter to Obama signed by the leaders of numerous environmental organizations including Audubon, the Clean Water Action, Earth Justice, National Wildlife Federation, Natural Resource Defense Council and Sierra club among others, urged the president to exercise more direct oversight of spill response efforts, especially regarding the testing and monitoring of chemical dispersants. Furthermore, the letter also urged NOAA to be more transparent in its conducting of the Natural Resource Damage Assessment (“Letter to President Obama” 2010). Testifying to Congress about the need for government oversight in testing and applying dispersants, National Wildlife Federation President and CEO Larry Schweiger asserted:

“The statement yesterday from BP CEO Hayward that the environmental damage will be ‘very modest’ lacks common sense and common decency,” said Larry Schweiger. “*The Gulf of Mexico is a crime scene and the perpetrator cannot be left in charge of assessing the damage.* The government needs to make sure that the right testing is done and that all data is disclosed to the public.” (Grant 2010, Emphasis added)

As concern over the environmental effects of dispersants mounted, the EPA and the Coast Guard were forced to take action, though their response was far from united.

EPA- Coast Guard Conflict over Dispersant Ban

Responding to public and political pressure, the Coast Guard and the EPA issued a joint directive on May 20, 2010 which instructed BP to identify a less toxic option than Corexit 9500 within 24 hours, and to begin using the alternative within 72 hours. If unable to identify a less toxic alternative, then BP was required to provide a detailed explanation of what was investigated and why it did not meet the standards.

BP promptly responded the same day with a memo arguing that only five of the dispersants on the NCP Product Schedule met the qualifications in the directive, but that one posed even greater risks as an endocrine disruptor. Due to constraints on

proprietary information of chemical dispersants and the limited testing of their toxicity, BP claimed that it was unable to effectively test the alternatives.

In short, BP concluded, Corexit appears to have fewer long term effects than the other dispersants evaluated. BP also made clear that the company did not, in any event, then have a sufficient stockpile of any dispersants other than Corexit and Sea Brat #4, and that the Sea Brat #4 supply might not be sufficient for both surface and subsea use. Corexit 9500 was the only dispersant used during the remainder of the spill. (U.S. National Commission 2010b:9)

BP simply refused to find another alternative. Expressing dissatisfaction of BP's efforts, EPA administrator Lisa Jackson urged for a reduction in the use of dispersants and ordered EPA testing to find another option. In a May 26 memo to BP's Vice President of Gulf of Mexico Exploration David Rainey, Jackson (2010a) wrote:

...I want to reiterate what Admiral Landry and I stated on a press conference call yesterday: The EPA and the Coast Guard believe your response to the directive was insufficient. We believe the response lacked sufficient analysis and focused more on defending your initial decisions than on analyzing possible better options. Because we believe your analysis of potential alternative dispersants was insufficient, the EPA is performing its own scientific verification of the data BP presented. In addition, the EPA will perform testing to determine whether there is indeed a less toxic, more effective dispersant available in the volumes necessary for a crisis of this magnitude.

Coinciding with the letter, on May 26 the EPA issued another directive which instructed BP to eliminate the use of surface dispersants with the goal of reducing numbers 75 percent. Furthermore, subsurface dispersants would be permitted to continue, but would be capped at 15,000 gallons per calendar day. Only in "rare cases" would exemption be permitted, and BP was required to make a formal request in writing justifying the need to apply dispersants to the Coast Guard FOSC.

Despite this directive, dispersant use persisted. According to the National Commission (2010b:11):

The effort to scale back use of dispersants had some effect. During the

week of May 18, 2010, BP applied 190,000 gallons total. The following week, it applied roughly two-thirds as much (135,000 gallons). Surface use fell from 120,000 gallons the week of May 18, 2010, to 40,000 gallons the week of May 25, 2010, although it then rose again and remained steady for several weeks at 80-90,000 gallons per week. By the end of May, BP had used a total of 950,000 gallons of dispersants, of which 740,000 were applied on the surface and 210,000 subsea.

Over the course of the last three weeks (June 22-July 12), the amount of subsea dispersant use grew to outweigh the use of surface dispersants. However, as Congressman Markey pointed out in memos to both the EPA and the Coast Guard, BP had exceeded the 15,000 gallon limit on four different occasions (May 28, May 30, June 6, and June 20) (Markey 2010).

Far from granting exemptions in “rare cases,” the Coast Guard offered little resistance and granted nearly every request to apply more dispersants.

On July 12, 2010, Admiral Allen’s Chief of Staff informed Rep. Edward Markey that dispersants were used - only when absolutely necessary to preserve the health and safety of workers at the well site and to minimize shoreline impacts. On July 30, 2010, Rep. Markey sent a letter to Admiral Allen pointing to more than 74 BP exemption requests in 48 days, of which all but ten were fully approved by the Coast Guard. Rep. Markey alleged - these applications appear to be rubber stamped by the Coast Guard. (U.S. National Commission 2010b:12)

In some cases, the Coast Guard even preapproved dispersant use for a week. Without the Coast Guard to oversee and enforce the mandate, BP was permitted to continue applying the toxic dispersants in spite of the EPA’s opposition.

While the EPA repeatedly requested more information on why BP sought so many exemptions, the Coast Guard viewed frequent dispersant approval as a strategic tool to prevent damage to the coastline. As described by the National Commission (2011:160):

These different perspectives on dispersants led to conflicts between

EPA and the Coast Guard. For example, on June 7, BP requested permission to spray dispersants on several large slicks. Despite Federal-On Scene Coordinator Rear Admiral James Watson's statement that he had "determined aerial dispersant the best and only way to mitigate the pending landfall effect of the oil spotted," EPA would not approve the exemption. The Coast Guard captain leading the majority of front-line operations was furious. "It would be a travesty," he wrote, "if the oil hits the beach because we did not use the tools available to fight this offshore. This responsibility needs to be placed squarely in EPA's court if it does hit the shoreline." Later that day, without having received responses to its requests for additional data, EPA threatened to issue a directive "to stop the use of all dispersants."

In this sense, Coast Guard officials felt that the EPA was hindering response efforts and ran the risk of causing even greater environmental damage as a result. Although they attempted to appear unified in their response, disagreements between the EPA and Coast Guard over dispersant approval continued. The National Commission (2011:161) asserts:

But disagreements came to a boil again in mid-July. By this point, EPA had finally installed a senior official, Assistant Administrator for Solid Waste and Emergency Response Mathy Stanislaus, on the ground at Unified Area Command. On July 13, BP's head of dispersant operations made a request to apply 10,000 gallons to slicks. The request ultimately went to Stanislaus, who denied it, noting that skimming in particular had been extremely effective over the past few days. The Federal On-Scene Coordinator (by this time Rear Admiral Paul Zukunft) replied that he could not "take the dispersant tool out of my kit when" oil threatened to hit environmentally sensitive areas in Louisiana...The back-and-forth continued, with BP ultimately prohibited from using dispersants on July 14. The capping of the well the next day tabled the conflict.

According to the EPA, since the well was capped on June 15, only 200 gallons of dispersant had been applied to the Gulf.

Despite the heated disputes between the EPA and the Coast Guard, in retrospect, both Admiral Allen and Administrator Jackson have stated that they were satisfied with the amount of dispersants used. However, as the National Commission

(2010b:19) highlights the lack of government information necessary to make an informed response:

Perhaps more than anything, the Deepwater Horizon experience with dispersants reveals the paucity of the kind of information that government officials need to make intelligent decisions about dispersant use in response to an oil spill. Although the absence of such information was well known before April 20, 2010, its practical effect had not been so glaringly realized.

While claiming success in the dispersant battle, the Coast Guard's review of the incident reached similar conclusions about the lack of information available to policymakers and industry insiders alike.

There were no operational protocols or scientific information available to assist decision makers in using this response option. Despite many years of experience in the use of dispersants, the lack of current science regarding the fate and effect of dispersed oil and its toxicity hindered the ability of responders and agency officials to adequately address these public concerns. (U.S. Coast Guard 2011: 43)

Similarly, there is little scientific information on what will happen to the dispersed oil and the effects it might have on marine life in the Gulf.

The battle over dispersant use highlights the conflict within and between responding government agencies and the responsible party. In response to public concern over the toxicity of dispersants, the EPA capitalized on the uncertainty in jurisdiction over subsea application and attempted to unsuccessfully assert authority. When ordered to find a less toxic alternative than Corexit, BP refused without suffering any ramifications. Moreover, while the Coast Guard appeared publicly in support of the directive, they functionally negated the EPA's efforts by permitting BP to continue using dispersants thereby facilitating the company's deviance.

Above all, the unrestrained, unprecedented use of dispersants in the Gulf allowed BP to conceal the amount of oil unleashed by Macondo. Once broken down into tiny droplets, the oil lingered in the form of plumes that were no longer visible

from the surface. While reducing the amount of oil causing damage to the shoreline, dispersants present an unknown danger to the marine life in the Gulf, the severity of which scientists are only beginning to understand.

Chemical dispersants were undoubtedly effective in preventing some of the oil from reaching the surface of the ocean and reaching land. But once large amounts of oil did inevitably begin to wash ashore, BP and the Coast Guard began to implement a coordinated plan of action to prevent the media and the public from viewing the extent of the environmental damage reeked by the Deepwater Horizon disaster.

Preventing Visibility: The Media Blackout

As the oil made landfall, the powerful images of dead and dying wildlife doused in oil quickly surfaced in the media and provided the public with a stark realization of just how bad the spill really was. In coordination with federal, state, and local law enforcement, BP acted quickly to block coverage of cleanup operations by prohibiting media contact with workers, limiting access to the coastline and airspace over the Gulf and harassing photographers and journalists. Beyond censoring media, on more than one occasion BP was caught altering official images of the response to make the company appear more active in operations than they actually were. Furthermore, BP also attempted to positively shape their public image by purchasing Google advertisements that would redirect internet traffic searching for information on the “Gulf of Mexico Spill” to BP sponsored sites. Collectively, this evidence suggests a coordinated effort by BP to control the images flowing from the Gulf, facilitated by the support of federal, local and private law enforcement.

The Brown Pelican: The Spill Mascot

As Louisiana’s state bird, the brown pelican has a special significance in the Gulf. Fighting for its existence, in the 1950s and 1960s the brown pelican was nearly

made extinct by pesticide poisoning, leading to its placement on the national Endangered Species Act. In an effort to rescue their state mascot, Louisiana imported the birds from Florida to establish a breeding population. So successful was the program that brown pelicans were removed from the list the year prior to the spill. The initial reports of oil soaked birds began to surface on April 30 and “From then on, crude-covered animals were a fixture in the media coverage and public perceptions of the disaster” (U.S. National Commission 2011:141).

As a senior official of the US Fish and Wildlife Service, the agency that oversaw the animal response and rehabilitation efforts, James Harris stated:

“I think it’s possible that they might come to symbolise the whole disaster,” he said. “For the people of Louisiana, the brown pelican is just as much a symbol of the state as the American eagle is for the nation as a whole, and to see the state emblem being threatened again and despoiled – people are very upset and angry about that.” (McCarthy 2010)

“They’re definitely everlasting at this point,” said Denis Paquin, the deputy director of photography at The Associated Press. “That is the power of still photos. This is the start of it, in a sense. They have become that iconic yet horrible vision of what people had expected to see” (Dunlap 2010). When confronted with the devastating effects of the spill on wildlife, a collective interspecies empathy was invoked in the public:

“You will remember a bird completely covered in oil,” Mr. Paquin said. “In the eyes, you can see there’s something wrong. And you can study it. The eyes always tell a story.” It is important, too, that most of the birds pictured by Mr. Riedel [an Associated Press photographer] and Mr. McNamee [a photographer for Getty Images] were alive. To the extent that anthropomorphic empathy kicks in, it comes much more easily looking at an individual, sentient creature and wondering, “What would that even feel like?” (Dunlap 2010)

Some people claim that BP acted deliberately to hide the impact the spill was having on wildlife. Moreover, reports also surfaced that BP was barring cleanup

workers from taking photos of dead animals that had washed ashore (Sheppard 2010). One BP contractor working on cleanup operations stated that, “There is a lot of coverup for BP. They specifically informed us that they don't want these pictures of the dead animals. They know the ocean will wipe away most of the evidence. It's important to me that people know the truth about what's going on here,” the contractor said” (Lysiak 2010).

Hiding the bodies

On a June 14, 2010 *MSNBC* interview with Keith Olbermann on “Countdown,” marine toxicologist Riki Ott described BP’s efforts to contain their crimes in the Gulf both by hiding the carcasses of wildlife and preventing cleanup workers from photographing the evidence.

“Turtle watch volunteers who walk the beaches consistently every morning at 6:00 a.m., they’re saying the carcasses are disappearing,” Ott told host Keith Olbermann. “People who walk the beaches at night, they’ve seen little baby dolphins wash up dead, flashlights, people descend out of nowhere, carcass gone in 15 minutes. There’s reports from offshore of massive kills on the barrier islands from fishermen who have been working on the spill response... BP’s response has been to use metal detectors to keep and prevent the people from even taking cell phones out to photograph this.” (Edwards 2010)

“I’ve been able to get some pictures of BP raking up bird carcasses, separating heads from bodies,” Ott said later in the interview. “Supposedly, NOAA is saying, oh, these carcasses are all going to be autopsied so we can determine cause of death. You’re not going to autopsy a carcass where the head is removed from the body. So, in my opinion, there’s a very strong attempt, not only to control and minimize how much oil was spilling, but now, to control the evidence of the damage, the appearance of carcasses.” (Edwards 2010)

The ability of images to speak truth to power cannot be underestimated: Seeing is believing. Learning lessons from the 1969 Santa Barbara as well as the Exxon Valdez spills in which images of oiled shorelines, dead whales, turtles and seals helped fuel the American environmental movement, congressional leaders warned that environmental

damage from Deepwater Horizon could similarly incite the public (Soraghan 2010).

Once the oil began to wash ashore after May 20, suppressing these images from public view became a primary object of the response that required a massive coordination of federal, state and local law enforcement in cooperation with private security.

Coast Guard: "This is BP's Rules, Not Ours"

In the wake of the spill, the Gulf region was bombarded by journalists and citizens seeking to document its effects. Beginning in May, numerous accounts began to surface of journalists being turned away by BP contractors, private security, the Coast Guard, and other law enforcement officials. According to Philips (2010):

Photographers who have traveled to the Gulf commonly say they believe that BP has exerted more control over coverage of the spill with the cooperation of the federal government and local law enforcement. "It's a running joke among the journalists covering the story that the words 'Coast Guard' affixed to any vehicle, vessel, or plane should be prefixed with 'BP,'" says Charlie Varley, a Louisiana-based photographer. "It would be funny if it were not so serious."

An initial report of censorship on May 20 occurred when a crew from CBS News attempting to document the spill was threatened with arrest if they did not turn their boat around. The Coast Guard official reportedly explained, "this is BP's rules, not ours" (Evans 2010).

Mac McClelland, a journalist for *Mother Jones*, also was confronted by police when trying to document the spill. On May 22, 2010, McClelland was refused access to Elmer's Island by a Jefferson Parish sheriff deputy who claims he is just "doing what they told me to do." While trying to gain access to the island, McClelland (2010c) recounts her exchange with BP representative Barbara Martin:

We tell her that deputies were just yelling at us, and she seems truly upset. For one, she's married to a Jefferson Parish sheriff's deputy. For another, "We don't need more of a black eye than we already have."

"But it wasn't BP that was yelling at us, it was the sheriff's office," we

say.

“Yeah, I know, but we have...a *very* strong relationship.”

“What do you mean? You have a lot of sway over the sheriff's office?”

“Oh yeah.”

“How much?”

“A *lot*.”

When I tell Barbara I am a reporter, she stalks off and says she's not talking to me, then comes back and hugs me and says she was just playing. I tell her I don't understand why I can't see Elmer's Island unless I'm escorted by BP. She tells me BP's in charge because “it's BP's oil.”

Interestingly, even a year after the spill in March 2011, McClelland again tried to gain access to Elmer's Island and was once again denied, this time by BP private security. The guard informed McClelland that she would have to get permission from central command. Upon obtaining permission and under close watch of a security guard, McClelland was allowed access to the wide open beach, which one year later continued to be tarnished by tar balls from the Macondo spill (McClelland 2011a).

In the instances that press were granted access, it was done with strict oversight from BP and the Coast Guard. Photographers were escorted by BP officials on boats and aircraft contracted by BP, thereby granting BP control over what could be seen. As Philips (2010) documents:

One of those instances occurred early last week, when Herbert accompanied local officials from Plaquemines Parish in a police boat on a trip to Breton Island, a national wildlife refuge off the barrier islands of Louisiana. With them was Jean-Michel Cousteau, son of Jacques, who wanted to study the impact of the oil below the surface of the water. Upon approaching the island, a Coast Guard boat stopped them. “The first question was, ‘Is there any press with you?’ says Herbert. They answered yes, and the Coast Guard said they couldn't be there.

Even members of Congress and state legislatures were denied access to the Gulf if

they had photographers and reporters as part of their entourage.

Last week, Senator Bill Nelson, Democrat of Florida, tried to bring a small group of journalists with him on a trip he was taking through the gulf on a Coast Guard vessel. Mr. Nelson's office said the Coast Guard agreed to accommodate the reporters and camera operators. But at about 10 p.m. on the evening before the trip, someone from the Department of Homeland Security's legislative affairs office called the senator's office to tell them that no journalists would be allowed. "They said it was the Department of Homeland Security's response-wide policy not to allow elected officials and media on the same 'federal asset,'" said Bryan Gulley, a spokesman for the senator. "No further elaboration" was given, Mr. Gulley added." (Peters 2010)

While it appears that DHS was involved in imposing the ban on media coverage of the oil spill, it is not entirely clear whether media coverage restrictions came from the White House, Coast Guard, or BP.

Coast Guard 65 foot "Safety Zone"

Though the policy had been informal since response operations began, on July 1, 2010 Admiral Allen officially announced a ban on civilians and media within 65 feet of cleanup equipment, workers and animals. Penalties for violating the "safety zone" included a Class D felony violation, a \$40,000 fine and possible jail time. Shortly thereafter on July 6, a spokesperson for the Admiral Allen released a statement elaborating that the zone was implemented due to concerns over vandalism:

Last week Coast Guard Captains of the Port in the region put in place limited, small waterside safety zones around protective boom and those vessels actively responding to this spill. This was required due to recent instances of protective boom being vandalized or broken by non-response vessels getting too close. These 20-meter zones are only slightly longer than the distance from a baseball pitcher's mound to home plate. This distance is insignificant when gathering images. In fact, these zones, which do not target the press, can and have been opened for reporters as required. (Wang 2010c)

Furthermore, the enforced zones were not a complete ban on media access as the Coast Guard would consider applications for permission to enter the safety zones,

though they would be decided on a case-by-case basis.

Federal Aviation Administration Flight Restrictions

Flight restrictions were expanded on May 11, 2010 to require private aircraft to obtain permission from BP's command center in order to fly over large sections of the Gulf encompassing most of the Louisiana coastline. In the event that a request was denied, the aircraft was then required to stay 3,000 feet above the restricted area. From this vantage point, the visibility of operations and the effects of the oil were extremely limited. One encounter with the flight restrictions:

The latest instance of denied press access comes from Belle Chasse, La.-based Southern Seaplane Inc., which was scheduled to take a New Orleans Times-Picayune photographer for a flyover on Tuesday afternoon, and says it was denied permission once BP officials learned that a member of the press would be on board. "We are not at liberty to fly media, journalists, photographers, or scientists," the company said in a letter it sent on Tuesday to Sen. David Vitter (R-La.). "We strongly feel that the reason for this massive [temporary flight restriction] is that BP wants to control their exposure to the press." (Philips 2010)

In response to the media blackout, numerous organizations responded. For example, the National Press Photographers Association (2010) asked President Obama to rescind the ban on members of the media from talking with cleanup workers and to institute a more reasonable safety zone for journalist covering the spill.

Vessels of Opportunity Program

Similarly, charter boat captains and local fisherman were also coerced by BP not to talk to the press about cleanup operations (Philips 2010). Even though BP continued to maintain that it was not blocking media access to the response, the contracts of those participating in the Vessels of Opportunity (VOO) program that went into effect May 2, 2010 prohibit unauthorized media contact. The VOO program employed people in the fishing industry at risk of losing their jobs due to the spill in the cleanup efforts (Frohne and Dearing 2010).

The contract included a clause prohibiting them and their deckhands from making “news releases, marketing presentation, or any other public statements” while working on the clean-up. It also included an additional section titled “Agreement Regarding Proprietary and Confidential Information,” which states that workers cannot disclose “Data” gathered while on the job, including “plans,” “reports,” “information” and “etc.” (Frohne and Dearing 2010)

For those dependent on the Gulf for survival left without an income because of the spill, speaking to the press about their experiences with the cleanup efforts could cost them what little remained of their livelihood. Frohne and Dearing (2010) conclude that “Ultimately, BP is not directly limiting media contact, but the contract added more uncertainty on top of what the fishermen are already experiencing.”

Policing the Media Blockade

The media blockade of the oil spill was enforced by a complex web of federal, state, and local law enforcement as well as private security guards hired by BP. Beyond media reports, there is little information about the structure and functioning of law enforcement agencies and private security organizations during the response operations. Based on numerous accounts from photographers and journalists from mainstream and alternative news organizations alike, it appears clear that there was a coordinated effort to block media and citizen access to the Gulf shoreline.

Reacting to mounting reports of Sherriff’s Departments obstructing public access to the spill, on June 28, 2010 the American Civil Liberties Union of Louisiana authored a letter to parish sheriffs in the Gulf to remind them of the First Amendment rights of journalists and citizens. The letter documents multiple instances of law enforcement blocking media access was reported to the ACLU. According to the ACLU’s letter:

Several reporters have been told not to film at spill sites in Louisiana. Incidents include attempts to film on a beach in Grand Isle and near

Venice. Reporters are told that they are not allowed to record because BP doesn't want filming there.

Elmer's Island Wildlife Refuge, off of Grand Isle, is blocked by Jefferson Parish deputies. Deputies told one photographer not to photograph them blocking the road.

At least one person was told by a Terrebonne Parish sheriff's deputy working private security detail for BP that he wasn't allowed to film outside of the BP building in Houma from a private, non-BP-owned field across the street. The deputy admitted that the guy wasn't breaking any laws but tried to intimidate him into stopping filming and leaving anyway.

We have reason to believe that deputies in other coastal parishes may also be working with BP to impede or prevent access to public lands and to interfere with members of the public and the media. (Esman 2010)

Louisiana Sheriff's Deputies

One citizen, Drew Wheelan, the conservation coordinator for the American Birding Association, had been stopped by BP private security while filming the BP building/Deepwater Horizon command center in Houma Louisiana from across the street in a field, on property not owned by BP. He was then approached by a Louisiana Sheriff's deputy who asked for his identification. According to McClelland (2010b):

Here's the key exchange:

Wheelan: "Am I violating any laws or anything like that?"

Officer: "Um...not particularly. BP doesn't want people filming."

Wheelan: "Well, I'm not on their property so BP doesn't have anything to say about what I do right now."

Officer: "Let me explain: BP doesn't want any filming. So all I can really do is strongly suggest that you not film anything right now. If that makes any sense."

After being allowed to leave, Wheelan was then pulled over and questioned by BP Chief of Security as the officer stood by. Once they did finally let him go, McClelland (2010b) states:

“Then two unmarked security cars followed me,” Wheelan told me. “Maybe I’m paranoid, but I was specifically trying to figure out if they were following me, and every time I pulled over, they pulled over.” This went on for 20 miles. Which does little to mitigate my own developing paranoia about reporting from what can feel like a corporate-police state.

In some instances, photographers were even stopped and questioned at BP facilities nowhere near the coast. While photographing a sign on a public roadway near BP’s Texas City refinery plant in preparation for a story with PBS Frontline, *ProPublica* photographer Lance Rosenfeld was detained by a BP security guard, a local police officer and a man who identified himself as from the Department of Homeland Security. After reviewing Rosenfeld’s photographs and determining them not to be a threat, they took down his name, date of birth, social security number and other personal information before letting him go (Engelberg 2010). Before the encounter had ended, the BP security guard requested Rosenfeld’s personal information, which he had given to the local officer. When Rosenfeld refused, the BP guard asked the local officer who relinquished the information to him. According to the officer, the information was necessary so BP could file a Homeland Security threat report, though he had already been deemed not to be a threat (Rosenfeld 2010). In response to the encounter, a BP spokesman claimed that the security guard was following the industry practice of reviewing potential terrorist threats and referring them to the Joint Terrorism Task Force as required by federal law (Engelberg 2010).

Private Security Contractors

As documented by Scahill (2010), Wackenhut was hired to do perimeter

security for the Deepwater Horizon Unified Command jointly run by BP and multiple federal agencies including the Coast Guard, DHS and DOD. The decision to hire Wackenhut to provide security for the Command Center was poorly timed since it had recently been revealed that a division of Wackenhut assigned to guard the U.S. embassy in Afghanistan was involved in a hazing scandal that took place amidst an environment akin to “Lord of the Flies.” After being denied access by Wackenhut personnel to interview Unified Command officials at the Center, Naomi Klein, who spent time in the Gulf following Hurricane Katrina documenting profiteering and privatization, commented:

“The whole Gulf Coast is a corporate oil state,” she told me. “It’s like BP broke it, so now they own the entire Gulf Coast.” She added: “We might accept the premise that BP is best positioned to know how to fix the blow up at 5,000 feet, but that also seems to mean they think they should control media access and the entire clean up of a massive national emergency. BP is in charge of everything. We were on the water in open seas the day before the Wackenhut incident and a boat pulled up next to us and asked if we worked for BP and we said, ‘No,’ and they said, ‘You can’t be here.’ It is completely sci-fi. It’s a corporate state.” (Scahill 2010)

BP also hired private security company Talon Security to prevent citizen and journalist access to beaches and cleanup operations. Reporter Scott Walker from New Orleans *6WDSU* was confronted by representatives from Talon Security who attempted to block him from interviewing cleanup workers on a local beach. Finding additional information about the contracts between BP and Talon Security, however, is challenging (Rawnsley 2010).

St. Bernhard Parish Sheriff Scandal

There were also reports of corruption and cronyism in private security contracts involving St. Bernhard Parish Sheriff deputies. During the spill response, a company owned by the cousin and business partner of St. Bernhard Parish Sheriff Jack

Stephens oversaw private security work by deputies. The contract, which lasted nearly five months and totaled nearly \$900,000, was quite lucrative and required very minimal oversight. Deputies from the St. Bernhard Parish Sheriff's Department, both on duty and off, provided all of the security detail for the parish, yet no documentation was kept of the details of off-duty hours worked performed by department deputies for Tony Fernandez Jr.'s (the cousin of Sheriff Stephens) company.

Unlike other departments which require greater transparency in the private contract work of their officers, St. Bernhard Parish department decided to outsource the jobs as separate private contracts between the deputies and their employers. "In the case of the BP spill, the private details during the summer were not arranged by the Sheriff's Office. Instead, Parish Oilfield Services LLC, a company owned by Fernandez, collected money from BP and distributed it to the deputies working the off-duty shifts" (Kirkham 2010). Fernandez's company continued to provide private security for BP in the parish until August at which time Professional Network Consulting Services was contracted by BP to manage security (Kirkham 2010).

While it cannot be known for certain if the St. Bernhard Parish Sheriff's Department scandal is indicative of other private-public law enforcement relationships following Deepwater Horizon, BP's use of private contractors deterred supervision of their activities. As the media's encounters with public-private law enforcement highlight, at times it was nearly impossible to decipher the difference between the two. And in most cases it was not clear whose laws they were enforcing: BP's rules or the government's.

Altering Images

Photoshopping Official Images of Response

On more than one occasion in mid-July, BP took efforts to deliberately alter

official images of the spill response using Adobe Photoshop. The alterations give the impression that BP officials were engaged in more sensational action than the original photographs document. In the first instance, a photo of the Command Center in Houston shows workers monitoring a wall of ten giant video screens displaying underwater images of the leak. The manipulations were made public when a blogger for the website “Americablog” wrote about the editing that had taken place (Aravosis 2011). A spokesperson for BP admitted that two of the screens had actually been blank in the original picture and three remote-operated vehicle images had been added with photo-editing software. Furthermore, the spokesperson commented that BP had ordered its workers to only use Photoshop for corrections such as color, cropping and removing glare. BP claimed that the photographer was “just showing off his Photoshop skills and there was no ill intent” (Hutchinson 2010). In further clarification, “BP spokesperson Scott Dean told Surge Desk that the photo was altered in post-production by the photographer and a team of editors, to make the scene “more panoramic,” but that it was a mistake and that the company has not and will not be doing any similar adjustments” (Franzen 2010).

The very next day, BP was once again caught doctoring images on their official website. The second photo, titled “View of the MC 252 site from the cockpit of a PHI S-92 helicopter 26 June 2010” was taken from the inside of a helicopter and appears to show it flying over the Gulf in response to the Deepwater Horizon rig. However, a number of objects in the picture contradict the appearance that it is flying. “Among the problems identified included part of a control tower appearing in the top of the top left of the picture, different shades of colours, its pilot holding a pre-flight checklist and its control gauges showing the helicopter’s door and ramp open and its parking brake engaged” (Hough 2010). For those familiar with the program Photoshop, these glaring

mistakes gave the impression that whoever made the alterations did so deliberately to make a point, or was totally inept at their job.

In response to the fumbled alterations, *Wired* magazine asked readers to “Help BP Learn How to Use Photoshop” by demonstrating true Photoshop proficiency and submitting their own alterations of BP’s photos:

BP claims these truly pathetic Photoshop jobs are the work of a contract photographer. It’s hard to know what to believe about this, but if there really is a photographer who took it upon himself to mess with these images, then this individual should be ashamed. We just can’t decide which is more shameful, the complete lack of ethics or the complete lack of Photoshop skill. So let’s lend poor, embattled BP a hand and show them what people who actually know how to use Photoshop can do. (Mason 2010b)

Their response was one of caustic wit, using the photos to aim poignant humor at BP’s utter failures in the Gulf. One example is the image of the pilots in the helicopter from the second doctored photo, parked in front of a McDonald’s drive thru menu; titled by the artist, “BP Pilots Take a Lunch Break; Sure, we’ll fix the leak, right after our hot apple pie” (Mason 2010a).

Redirecting Internet Searches

In yet another attempt to shape their public image, BP also sought to redirect the flow of internet traffic by purchasing Google AdWords for terms such as “gulf oil spill.” Funding such advertisements elevates the website link, and thus the message sponsored by BP, to the top of the list of search results. As Burkart (2010) astutely comments:

Is it really a big deal? Yes and no. If buying a top-level Google AdWord is a sin, it is certainly at the bottom of a very long list. But when you click on the official BP website link and see the lovely, perfectly white beaches on the home page, it’s hard not to get mad. I marvel at the haunting parallel between BP’s handling of oil and their handling of public communications...

Burkart's remark drives home the point that it is not merely an instance of photo alteration, sponsoring, or deception that indicts BP for its misdeeds during the spill. What is more significant is the deliberately orchestrated campaign between state and corporate officials to conceal from the public the environmental damage caused by BP's oil.

As the oil from Macondo washed ashore, the federal government in cooperation with BP established a media blackout throughout the Gulf of Mexico region that was enforced by federal, state, and local law enforcement alongside BP's private security forces. One element of the blockade the Coast Guard's 65 foot "safety zone" around all cleanup operations which prohibited both journalists and citizens alike from viewing the effects of the spill and the state-corporate response. The Federal Aviation Administration followed suit by implementing flight restrictions over the Gulf which prohibited media flights below 3,000 feet making it virtually impossible to document the extent of the damage from the air. Furthermore, BP took efforts to restrict private responders using their own boats in the cleanup effort through the Vessels of Opportunity program which contractually prohibited participants from making public statements or talking to the media about response operations.

Enforcing the restrictions on access to cleanup operations along the Gulf of Mexico was a complicated network of law enforcement from the Department of Homeland Security, the Coast Guard, and the Louisiana County Sheriff's officers in cooperation with BP private security from Wackenhut and Talon Security, among others. As the accounts of multiple journalists, scientists and citizens makes clear, at times it was nearly impossible to determine exactly who was enforcing the blockade on the Gulf. By some reports, the Coast Guard was taking orders from BP, whose

private security forces worked as coequals alongside the Sheriff and DHS. Regardless of who was calling the shots, law enforcement and private security nonetheless enforced the rules, barring the public from viewing the devastating effects of the spill.

When the effects of the spill could not be concealed by dispersants, nor hidden from public view through a media blackout, BP went as far as to deliberately alter official images of the response efforts. Twice in two days BP was caught by internet bloggers who identified, unveiled, and then mocked the amateur Photoshopping skills used to make the company appear more active in photographs of response efforts than they actually were. Moreover, BP also bought advertisements from Google AdWords that redirected web searches for information about the Gulf of Mexico spill to the company's website. Combined with efforts to restrict access to the cleanup operations, BP's manipulation of official images and directing the flow of internet traffic suggests a coordinated campaign to suppress and distort images and information about the effects of the spill.

Conclusions

In the response to the spill, the federal government and BP worked as co-combatants with the shared goal of limiting the visibility of the damage caused by the oil by using unprecedented amounts of toxic dispersants, prohibiting access to cleanup operations, and manipulating official images and information of the response. The Coast Guard especially played an active role in helping to facilitate concealment of the environmental effects. Spurred to action by public pressure, the EPA tried unsuccessfully to exert control over dispersant use. Despite the joint directive to inhibit the use of dispersants and the requirement that BP seek Coast Guard approval, the agency's allegiance became evident as they provided the opportunity for unrestrained application of the toxic chemicals while the EPA struggled to force

compliance with the mandate. Ultimately, BP never complied with the directive and the conflict between the EPA and the Coast Guard was downplayed by the Obama administration.

The oil that could not be concealed by chemical dispersants washed ashore in early May and as it did, BP and the federal government coordinated a blockade on media access to all cleanup operations which was enforced by private security, in coordination with federal, state, and local law enforcement. Violation of the Coast Guard's 65 foot safety zone threatened steep fines and jail time for citizens and journalists that breached its boundaries. Similarly, the FAA issued flight restrictions which prevented media flights from capturing the extent of the damage from the air. Furthermore, the admittedly close relationship between BP and the Coast Guard as "co-combatants" in the war against Macondo was well documented by journalists. Although at times it appeared that the Coast Guard was following BP's rules, not the other way around. The BP-government restrictions on access to response operations created the opportunity for the environmental damage to be hidden from public view.

The complex matrix of public and private law enforcement that imposed the blockade operated in coordination, but alluded responsibility. Multiple accounts suggest that the DHS, Louisiana Sheriff and BP private security worked in unison to enforce the ban, but it was never clear what organization was in charge. The distinction between public and private law enforcement in some regards is meaningless, since many in the Louisiana Sheriff's office also worked during their off hours for private contractors hired by BP. Nevertheless, close coordination by BP and law enforcement at all levels made it possible to suppress images of environmental devastation reeking havoc on the Gulf from reaching the public.

BP took deliberate and identifiable efforts to control the images and

information available to the public about the response to the spill. As if hiding the evidence of the spill's effects was not enough, BP went even further to alter official images of its response operations to make the company appear more active than it actually was. Moreover, BP also purchased advertisements from Google in an attempt to control the accessibility of public information about the spill by rerouting the flow of internet traffic to the company's official site. In combination, unrestrained dispersant use, blackout of cleanup operations, close coordination between private security and law enforcement, and manipulation of information were all attempts by BP to evade negative public criticism and media scrutiny of the environmental effects of the spill.

SECTION IV: CONCLUSIONS

CHAPTER EIGHT: SUMMARY OF FINDINGS

The 2010 Gulf of Mexico Spill: State-Corporate Environmental Crime

As this dissertation has documented, the causes of the Deepwater Horizon explosion and the response to the blowout of the Macondo well can be classified as an instance of state-corporate environmental crime. Driven by the pursuit of profit from deepwater exploration and development in the Gulf of Mexico, the federal government and the offshore industry have pioneered an inherently environmentally harmful activity. While the potential to minimize harm to human life through workplace safety is a debatable topic, environmental harm is an implicit part of offshore industry operations since oil spills, discharges of drilling mud and other forms of pollution are routine. In this regard, the very structure of government-oil industry relations facilitates and ensures continued environmental degradation.

The explosion of the Deepwater Horizon rig and the blowout of the Macondo well damaged humans, animals and ecological systems. The most apparent and immediate human harm came from the initial explosion of the rig which killed eleven people, injured sixteen, and caused great emotional trauma for the surviving crew members. Moreover, residents of the Gulf coast states also suffered as the oil destroyed their economic livelihood, leading to increased psychological stress for many. The environmental harm done to the ecological systems of the Gulf of Mexico by the uncontrolled flow of oil was devastating. The untested and unprecedented application of millions of gallons of toxic chemical dispersants further injured wildlife.

In the two years since the spill, it has become evident that the oil has had lasting effects for Gulf of Mexico's ecosystems. For instance, dolphin deaths in the Gulf have been more than twice the normal rate, leading NOAA to declare an "Unusual Mortality Event," although neglecting to draw connections to the spill. Furthermore, the government was quick to reopen fishing areas in the region immediately following the spill without seriously considering the effects of the oil on the food chain. Research on the environmental effects of the spill is ongoing and continues to be a matter of scientific debate.

Ultimately, the true extent of the environmental harm caused by the disaster may never be known due to the success of state-corporate efforts to suppress scientific evidence and information about the spill. The response to the spill by BP and the federal government illustrates the means by which powerful organizations are able to hide their environmental crimes from public view. As this study has argued, the intersection of the federal government and BP working together to conceal widespread harm to the ecological and biological systems of the Gulf can and must be classified as a state-corporate environmental crime.

Integrated Theoretical Analysis of the 2010 Gulf of Mexico Spill

Returning to Michalowski and Kramer's (2006) Integrated Theoretical Model of State-Corporate Crime, the motivation, opportunity structure and operationality of social controls at the institutional, industrial, organizational and interactional levels can be applied to the 2010 Deepwater Horizon explosion and the response to the blowout of Macondo. As this analysis has demonstrated, the movement of the oil industry into deeper waters was encouraged by federal policy and coincided with decreasing regulation of offshore activities in the Gulf of Mexico. By the time the spill had occurred, the normalization of deviant practices had pervaded the organizational

cultures of the Minerals Management Service, BP, Transocean and Halliburton. In response to the spill, the federal government in coordination with BP and private contractors manipulated scientific evidence surrounding the size spill and suppressed images and information about the environmental effects. This evidence suggests that a major goal of the state-corporate response was to cover-up the effects of the blowout of Macondo through a variety of means.

Causes of the Blowout of Macondo

The causes of the explosion of the Deepwater Horizon rig are rooted in radical changes to the nature of federal and corporate relations that structure the offshore oil industry. As the second largest source of federal revenues next to income taxes, royalties from offshore leases provided a strong motivation for government to expand deepwater development despite the environmental risks posed. Creating the means for corporate exploration of the deepwater horizon, legislation passed since the 1980s has dramatically increased industry choice and access to offshore lands, even at the expense of greater revenues from leases. Throughout the 1990s, the Gulf of Mexico was championed as the next big frontier in offshore exploration, but these reserves are quickly disappearing and discoveries have not lived up to initial promises. Nonetheless, offshore development in the Gulf of Mexico has expanded immensely in the past decades as a direct result of federal legislation encouraging deepwater exploration.

The outsourcing of essential services to specialized private contractors is a dominant trend that began the 1980s and 1990s and has become a normalized practice throughout the offshore industry today. On the Deepwater Horizon rig, the use of private contractors to monitor, drill, test and cement the rig was extensive. The increased use of private contractors fundamentally altered the nature of the offshore industry, and served as an obstacle to federal oversight. The interdependence between

lease owners and privately contracted companies to perform vital services contributed to task segregation and further complicated regulatory efforts. As noted by several other studies of state-corporate crime, this increasing privatization is not unique to the oil industry, but is part of a much larger shift in political-economic relations more broadly. Thus, the changing institutional environment was an enabling factor in the Gulf of Mexico spill.

The federal government helped shape the opportunity for the Deepwater Horizon explosion and the blowout of Macondo in a number of ways. Incentivized by royalties from leasing the outercontinental shelf of the Gulf of Mexico, the federal government provided the opportunity for expansive offshore development by granting the oil industry greater access with fewer royalties and less oversight. Implicit in its conflicting founding missions, corruption at the MMS was rooted in its dual mandates of regulating the offshore industry while also collecting royalties from the leasing process. The incompatible functions of the U.S. Geological Survey and the Bureau of Land Management came to exist within the same agency when Department of Interior Secretary James Watts created the MMS in 1982 amidst increasing government deregulation. From that point forward, the operative goal of royalty collection began to take precedence over regulation of the industry. In the years leading up to the Deepwater Horizon disaster, relations between the MMS and the oil industry had become so close that at times it was impossible to tell them apart.

Normalization of deviance at the MMS

The normalization of deviance had infected the organizational culture at the MMS. Prohibited by federal ethics guidelines, employees at the MMS were having sex, doing drugs and accepting gifts from oil industry representatives. So normalized was this behavior that MMS employees involved in collecting royalties even went as far as

to discuss altering the federal guidelines to legally accommodate their close knit relationship with the industry. As funding for the MMS declined, the number of inspectors in the Gulf of Mexico was unable to keep pace with the expansion of offshore development in the 1990s and 2000s. This expansion placed increased emphasis on ensuring royalty collection at the agency and employees found it necessary to undertake illegal means to accomplish their jobs. Lacking funds, staff and technological expertise, the MMS had relegated the duty of regulation to the industry itself, thereby relinquishing any control. By the time the MMS Royalty-in-Kind scandal became public in 2008 the corrupt relationship between the oil industry and the federal government was already deeply engrained.

Normalization of deviance at BP

Within the organizational culture at BP, deviance had long been an institutionalized practice not only in its offshore operations in the Gulf of Mexico, but at its facilities across the US and abroad. As the disasters at Texas City in 2005 and Prudhoe Bay, Alaska in 2006 attest to, the normalization of deviance had become a systemic problem across the company. Even though prior investigations had identified aggressive cost cutting and declining oversight from BP management as causal factors in these other accidents, the fines imposed did little to impede the company's reckless pursuit of profit at the expense of safety. Rather, the disintegration of infrastructure and management at the company continued to compound without consideration of the safety and environmental risks posed.

Upon becoming CEO of BP, John Browne implemented a number of changes that radically altered the organizational structure of the company and provided the opportunity for the disaster to occur. Enduring recurrent mergers and acquisitions of other major oil companies, BP went from a second tier player to an industry leader

overnight. Alongside this rapid growth, Browne enacted policies that functionally decentralized the company and diminished management oversight, thereby providing the opportunity for deviant practices to develop. Furthermore, he also ordered aggressive cost cutting policies which generated pressure across the company to turn to illegal means to achieve stringent goals. By linking bonuses to short term, variable cost cutting targets, Browne's policies encouraged managers at BP to ignore sorely needed safety upgrades that would show up in the bottom line. Over time, these incremental increases in the acceptability of risk made a catastrophic outcome inevitable.

BP was not the only company involved in the Deepwater Horizon explosion to experience growing normalization of deviance within their organizational culture. A cursory review of the recent pasts of Transocean and Halliburton also reveals a pattern of widespread environmental degradation, corruption and illegal behavior. United in a common pursuit, BP, Transocean and Halliburton were collectively involved in completing the Macondo well. A pervasive pattern of mismanagement therefore went beyond the internal workings within each company and existed between these three companies drilling the Macondo well. Therefore, decisions to quickly finish the well were made without any internal or external organizational mechanisms for social control on the Deepwater Horizon rig.

As completion of the well fell behind deadline the emphasis on goal attainment mounted from BP, and all of the corporations involved were pressured to take questionable means to finish the job. Motivated by efforts to save time and money, BP made a number of identifiable decisions concerning the design and cementing of the well that placed constraints on the actions of Transocean and Halliburton. These last minute changes were hastily reviewed and approved by the MMS, therefore escaping

any significant oversight. Insufficient maintenance of the blowout preventer on the Deepwater Horizon and dismissed forewarnings by management at Transocean and BP provided the opportunity for the spill to occur. Similarly, the decision by BP to use fewer centralizers, lighter weight cement and less drilling mud influenced Halliburton's cementing operations. Yet this cannot excuse Halliburton's decision to ignore the results of failed tests indicating the cement slurry was unstable. Under the leadership of BP, all of these companies in coordination with each other disregarded environmental and workplace safety regulations which became increasingly acceptable as the Macondo well was rushed to completion. With normalized deviance plaguing the entire Deepwater Horizon team, there was little self regulation by BP, Transocean or Halliburton. Without any internal or external oversight at the institutional, industrial and organizational levels, there were no controls to prevent the 2010 Gulf of Mexico spill.

State-Corporate Cover Up: The Response to the Spill

Once the Macondo well had been unleashed, the primary goal of state-corporate response efforts was to conceal from public view the environmental damage caused by the spill. There were numerous motivations for federal and private responders alike to minimize the extent of the oil both through the manipulation of scientific evidence and the suppression of images. Fearing another federal debacle in the Gulf like the Bush administration's 2005 response to Hurricane Katrina, the Obama administration was concerned with asserting the government's authority over response operations. Firmly implicating the executive branch in the state-corporate cover up, the White House in coordination with the Department of Homeland Security (DHS) had a pivotal influence on response operations through specific agencies within the Unified Command. Cabinet level agencies within the Department of Interior and

the DHS including the Coast Guard, the Department of Energy, and the National Oceanic and Atmospheric Administration undertook efforts to downplay and obscure the environmental effects of the spill. The calculation of the official flow rate was a particularly politicized issue in which the Obama administration pressured other agencies to underestimate the size of the spill and downplay its effects. Similarly, the White House and the DHS controlled the flow of information concerning response operations by reviewing and approving all public communications released by Unified Command and the Coast Guard. Tight control over public communications surrounding the response gave the Obama administration the ability to shape the public's perception of the spill and the state-corporate response.

Underestimation of the flow of oil from the Macondo well was another means by which BP and the federal government sought to obscure the size and extent of the spill. During the response the Coast Guard consistently asserted that they were gearing their efforts towards a worst case discharge scenario, but this information was not publicly released at the time. Although worst case discharge scenarios cited the potential for a hypothetical flow from Macondo as large as 250,000 barrels of oil per day, for the first month of response operations the federal government provided low estimations of the size of the spill, even when presented with much higher calculations from independent scientists. The decision to withhold information about size of the spill including the worst case discharge scenario seems to have come directly from the White House. Early on in the response, some scientists at NOAA wanted to make public the worst case discharge scenario, but were denied permission to do so by the White House Office of Management and Budget. This reluctance to release an accurate spill rate led many to question what information the federal government had about the spill and what it was concealing from the public.

As public outrage escalated, the federal government was forced to take a more explicit role in downplaying the scientific evidence of the spills environmental effects. To establish an estimation of the flow rate the Obama administration appointed two groups, the Flow Rate Technical Group led by Director of the U.S. Geological Survey Dr. Marcia McNutt and a team from the Woods Oceanographic Hole Institute led by Secretary of Energy Dr. Steven Chu. The efforts of the Flow Rate Group to produce an accurate estimate were thwarted by a senior NOAA scientist on the team who prematurely released only the lower bounds of the range before it could be peer reviewed. As an investigation by Public Employees for Environmental Responsibility has shown, the NOAA scientist was acting in response to pressure from the White House to underestimate the size of the spill. Moreover, Director McNutt also expressed frustration in dealing with administration officials at the DOI, DHS, and Unified Command who persisted in confusing the concept of a lower-bound estimate with a precise calculation of the flow rate. In the end the team led by Secretary of Energy Chu produced what came to be seen as the “official” flow rate of 62,000 barrels per day at the peak of the spill, or 4.9 million barrels in total. In these ways, the Obama administration influenced government science advisors to obscure the size of the spill.

Scientific propaganda

Alongside the release of the official flow rate was a report from NOAA that evaluated the fate of the oil and the effectiveness of response efforts. Released in August 2010 with great fanfare from the White House, NOAA’s *Oil Budget* proclaimed that much of the oil in the Gulf had disappeared, even before the drilling of the relief wells had been completed in mid-September. The release of the official flow rate and the *Oil Budget* were both means by which the federal government sought to

mislead the public about the environmental damage caused by the spill. Questioning the government's official account of the fate of the oil, independent scientists had already identified massive plumes lurking beneath the ocean comprised of dispersed oil, yet officials within the Coast Guard and NOAA initially sought to discredit and disregard their findings. As peer reviewed evidence of the oil plumes continued to grow, NOAA was forced to admit the existence of large "ephemeral clouds" of oil. As recently as August 2011, there were continued reports that oil may still be seeping from the Macondo well, yet both the Coast Guard and BP have denied such claims. Finally, in the months of the spill NOAA in collaboration with BP created a propaganda campaign throughout Gulf coast public schools in an attempt to dispel "myths" about the harmful environmental effects of chemical dispersants. All of this evidence suggests a coordinated effort led by the Obama administration to facilitate a cover-up of the environmental effects of the oil.

The federal government was not alone in its attempts to manipulate scientific evidence surrounding the spill. Part of a growing trend, Big Oil has increasingly invested in research initiatives with public universities. Brokered by Dr. Steven Chu in 2008, BP's \$500 million Biosciences Institute at UC Berkeley forged the largest ever private-public research partnership. Following the blowout of Macondo, BP similarly established the Gulf of Mexico Research Initiative (GMRI) to fund "independent" research on the environmental effects of the spill. Funding through the GMRI granted BP a means to influence scientific evidence surrounding the extent of the environmental damage. University scientists throughout the Gulf region were approached by BP to conduct contracted research, leading the president of the American Association of University Professors to accuse BP of attempting to silence researchers from sharing their findings with the public. Furthermore, the use of

contracts by both BP and Transocean to quiet not only researchers, but clean up workers and survivors of the explosion as well, was a recurring means of concealing corporate criminality.

Concealing the damage

Driven by the overarching goal of preventing the oil from reaching the shoreline, the application of unprecedented amounts of hazardous chemical dispersants both at the wellhead and to the surface was another means by which BP and the federal government hid the amount of oil. Under the Oil Spill Pollution Act, BP's financial liability was directly linked to the amount of oil flowing from Macondo and the measurable environmental impacts of the spill; thus the company was clearly motivated to use dispersants to hide the amount of oil visible from the surface. The motivations of the federal government were to contain the financial impact of the spill to the region's tourism and fishing industries, not to mention the continued development of offshore oil leasing in the Gulf of Mexico. Approved by the EPA for use in oil spill cleanup, BP chose to use Corexit 9500 and 9527 manufactured by Nalco, one of the most toxic and least effective dispersant options. One motivating factor for the selection of such an inefficient option had to do with BP's shared board of directors with Nalco. As the spill dragged on, public concern over the environmental and human health effects of Corexit forced the EPA to take action. Even though the EPA and the Coast Guard issued a joint directive that BP select a less toxic and more efficient option, the EPA was unable to force BP to comply. Furthermore, rather than regulate BP's use of dispersants as specified by the directive, the Coast Guard facilitated the company's continued application of the hazardous Corexit. Viewing themselves as "co-combatants" alongside BP in the fight against the

spill, the Coast Guard worked hand-in-hand with the company to hide the effects of the oil from public view.

Censoring images

Immediately following the explosion of Deepwater Horizon, controlling information and images surrounding the spill became a primary goal of state-corporate response efforts. In the early hours of the fire, Transocean with support from the Coast Guard issued a blackout of telephone and internet communications for rigs throughout the Gulf of Mexico. Also prohibited from contacting their family members, the traumatized survivors of the explosion were interrogated, drug tested and coerced into signing waivers by representatives from the MMS, the Coast Guard, and lawyers from Transocean. Delayed on board for hours before being reunited with their loved ones, some survivors felt that government and corporate officials were trying to get their story straight before going public with the information. Once initial images of the Deepwater Horizon engulfed in flames finally reached the public, they had been carefully provided by the Coast Guard. In this regard, the isolated location of the blowout allowed for careful coordination of information and images by state and corporate officials in the immediate aftermath of the incident.

When the oil from Macondo inevitably reached the coastline despite the application of chemical dispersants, the federal government implemented a regional blackout of media communications in various capacities. Access to cleanup operations, beaches and airspace was blocked through restrictions issued by the Coast Guard and the Federal Aviation Administration, thereby limiting public visibility of the spill. Journalists and citizens alike were prohibited from viewing and documenting not only the devastating effects of the spill, but state-corporate response efforts as well. The ban on access to cleanup operations helped cover up the environmental effects of the

spill and contained public outrage. Additionally, the overrepresentation of vulnerable populations such as unemployed persons, racial minorities and inmate labor in the most hazardous cleanup jobs outsourced through a web of private contractors and subcontractors further contributed to BP's ability to censor its operations. The enactment and enforcement of a media blackout provided the opportunity for widespread state and corporate deviance in response to the spill, including concealment of the extent of the environmental devastation caused not only by the spill, but by the application of dispersants.

The blackout on media access was made possible through an intricate matrix of federal and local law enforcement, in addition to private security contracted by BP. As documented by journalists, agencies including the DHS, the Coast Guard, Louisiana Sheriff Deputies, and private security companies including Wackenhut and Talon Security, were working to suppress media coverage of the oil spill. In most cases, it seemed nearly impossible to tell exactly who was issuing orders. However, journalists covering the spill stressed the consistency in which the Coast Guard appeared to be following rules issued by BP rather than their own guidelines.

Within the Coast Guard however, pressure from above had prohibited the agency's release of public information that had not first been reviewed and approved by the White House and DHS. The restrictions on media access to the Gulf of Mexico and response operations thus appear to have come directly from the Obama administration itself. Overall, the state-corporate police blockade functioned to discourage social control of deviance by media and citizens. Suppression of images and information helped to contain public outrage while allowing BP and the federal government to undertake extremely dangerous response measures. All of this evidence

suggests that the response to the spill was a state-facilitated corporate cover up of the environmental damage caused by the oil.

From 1969 Santa Barbara to the Gulf of Mexico 2010: What has changed?

As Molotch (1970) documented in the aftermath of the Santa Barbara spill, the national government continuously defended and supported the oil industry despite public pressure. A brief comparison of the commonalities and differences between the two spills in terms of the response by government and industry will provide insight into the durability of state-corporate power arrangements over time. In his analysis, Molotch (1970) identified a close relationship between the Department of Interior and the oil industry whose joint interests superseded those of the public. The response to the blowout of Macondo similarly revealed the powerful and enduring arrangements between the federal government and the offshore oil industry, although through different executive branch agencies and with greater reliance on private contractors.

Drawing connections to government and corporate actors, Molotch (1970) noted the crucial role played by the “knowledge production industry” comprised of university scientists and media organizations. During the course of the Santa Barbara spill, the oil industry sought to influence university researchers, especially within the local area. Similarly, BP attempted to buy and silence Gulf coast researchers by funding the Gulf of Mexico Research Initiative. Just as Dr. DuBridge and his Panel had close ties to Union Oil through Cal Tech, DOE Secretary Dr. Chu had questionable ties to BP via the UC Berkeley Energy Biosciences Institute. Despite their obvious conflicts of interest, both of these presidentially appointed positions placed unqualified government officials in roles that oversaw critical technical decisions about well control efforts. In this regard, the selection of both Dr. DuBridge and Dr. Chu to key roles in the responses was clearly in service of oil industry

interests. Therefore, it seems that scientific misconduct by the federal government is not limited to the present day, but instead has long been an established part of government-oil industry relations.

An important difference between the response to the Santa Barbara and the Deepwater Horizon spills is a concerted state-corporate effort to deny media access to the spill and especially the significant role of public and private law enforcement in enforcing the ban. Images and information about the 1969 spill helped to galvanize the public in support of the environmental movement, which resulted in significant legislative reforms to the dismay of the oil industry. Due to the proliferation of technology and the accessibility of information via the internet, photographs and news are more widely available than ever before. Therefore, a major aim of the state-corporate response to the Macondo blowout was geared towards concealing the visibility of oil and its environmental effects through dispersants and control of images and information. Because of these technological changes to the knowledge production industry, the media blockade and an elaborate state-corporate police apparatus to enforce it became necessary in response to the most recent spill. Finally, a silent yet recurring player that symbolizes a far different era of national power than that of the Santa Barbara spill, the DHS had a central role in both information control and law enforcement activities during the response to Deepwater Horizon. With its mission to secure the nation from all the threats it faces, the more recently established DHS above all other agencies was capable of overseeing the response of law enforcement at all levels. The expanded scope and reach of federal power through the DHS signifies an important difference between the 1969 and 2010 response efforts.

Reflecting on the two spills in a 2010 interview with *Scientific American*, Molotch notes that there are a number of other significant regional, racial and class

differences that influenced the response to the spill. First, since oil drilling off the California coast is so close to land and Santa Barbara resides on the top of a hill overlooking the ocean, the visibility of the spill was immediately obvious to residents. In contrast, the location of the Macondo well 50 miles away from land provided an easily concealable crime scene. Moreover, Gulf coast residents are far more dependent on the oil industry for their livelihood compared to the wealthy citizens of Santa Barbara whose economy is based more on tourism and higher education. The wealth of the Santa Barbara citizens along with their cultural and political connections allowed the city's residents to organize more effectively against oil industry interests in 1969. With their livelihoods destroyed by the spill, the poor and minority residents of the Gulf region were forced to rely on employment from BP and their private contractors in the cleanup effort (Greenmeier 2010). Thus the location of the Deepwater Horizon disaster, as well as the race and class characteristics of the Gulf region helped to facilitate elements of the state-corporate cover up.

In closing, Molotch predicts that the Macondo spill will not give rise to the same kind of widespread public support for the environmental movement like occurred following the 1969 spill, despite the exponential difference in the size. In contrast to what he describes as "a religious awakening" towards environmental protectionism following the Santa Barbara spill, Molotch correctly concluded that the 2010 Gulf of Mexico spill will not similarly mobilize the public: "Something like that could only happen once" (Greenmeier 2010). Indeed, the federal government-oil industry interests made sure that such public sentiment for environmental harm would never rise again. It therefore appears that the state-corporate response to the 2010 spill was successful in concealing the environmental damage and as a result public reaction was contained.

Oil in the Gulf and State-Corporate Power in America

The 2010 Gulf of Mexico oil spill was an unprecedented catastrophe that provided insight into the contemporary nature of state and corporate power arrangements in America. The causes of the Deepwater Horizon explosion were the result of increased risk-taking by both the federal government and the oil industry in pursuit of profit from deepwater development. While the federal government shied away from its regulatory role over the years, it nevertheless persisted in advancing deepwater oil exploration in the Gulf of Mexico by offering industry greater access through leases with fewer royalty payments. Since the Santa Barbara spill in 1969, federal connections to the oil industry appear to have only become more pervasive. The similarities of the federal response to the Deepwater Horizon disaster in comparison to Molotch's (1970) detailing of power in America in the wake of the Santa Barbara spill attest to the persistent durability of these state-industry power arrangements.

Although these federal-industry power arrangements are not new, their form has nonetheless changed since the Santa Barbara spill. The politicization of scientific evidence and the control of images and information are increasingly common means by which governments and corporations seek to conceal their crimes. Far from a thing of the past, the response to the Gulf spill demonstrates that state-corporate censorship and propaganda has taken on a more insidious role in the modern era. Furthermore, in the aftermath of the disaster the entwinement of federal and local law enforcement with private security forces to enforce restrictions on public access to the Gulf coast, suggests a blurring of the lines between state and corporate police power. The DHS, Coast Guard, Louisiana Sheriffs and BP private security appeared alongside one another and acted in coordination without any clear lines of authority. This trend

which has also been documented by other state-corporate crime research (Welch 2009; Whyte 2003) raises many critical questions about the accountability of law enforcement in an era of expansive corporate power.

Supporting the current state-corporate power arrangement is the essential role of oil in fueling our industrialized capitalist economy. Nearly everything we consume is either comprised of oil (such as plastics), or made possible by it (such as our global food system). Fundamentally, our entire societal structure since World War II has been predicated on oil. This widespread total and utter dependence on this resource upholds the corrupt relationship between government and the oil industry. As the global supply of oil continues its descent, the number of wars waged for control of this precious resource will only persist. Indeed, as other research has demonstrated (Kramer and Michalowski 2005; Whyte 2007), the U.S. led 2003 illegal occupation and invasion of Iraq and the crimes flowing from it show the extent of state-corporate violence waged in pursuit of oil. Despite the growing potential of social movements willing to criticize the corruption of politics by corporations, our dependence on oil runs to the core of our modern existence. With so much of our material reality made possible by oil-based products, it is difficult to imagine how the state-oil industry power relations will ever wither away while this reliance remains. Until this addiction is broken through a radical overthrow of the industrial capitalist economy and the government that supports it, power in America will continue to be dominated by state-oil industry interests.

Criminogenic Industry Structures

As this analysis has shown, the environmental disasters caused by the operation of the offshore oil industry are not isolated incidents, but are instead evidence of a broader criminogenic relationship between the federal government and the oil industry.

With the rise of private contractors and sub-contractors not only in the oil industry but across the economy more broadly, it is even more important to consider the myriad of corporations operating in common industrial environments. In this sense it becomes essential to focus on the industry as a level of analysis since examination on the organizational level is insufficient for understating the decentralized state-corporate relations of the contemporary era.

Studying the relations of government and corporations at the level of industry further substantiates the utility of the concept of state-corporate crime and the Integrated Theoretical Model by drawing attention to interactions within and between these organizations. Government policy configures industry relations by facilitating and constraining the economic activities of corporations involved in a common means of production. The organizational behavior of corporations within an industry is therefore collectively shaped by government policy such that an industrial culture develops. When corruption and environmental degradation have become the status quo within the culture of an industry, deviance has moved beyond normalization to the point of institutionalization. As a comparison of the federal-oil industry relations in the aftermath of the Santa Barbara and Gulf of Mexico spills shows, there are historically enduring dimensions of these power arrangements that continue to result in significant social, physical and environmental harm. Due to this, the state-corporate arrangements of the oil industry must fundamentally be viewed as a criminogenic industry structure.

Limitations and Directions for Future Research

One primary limitation to this research is that it is not a comprehensive analysis of the state-corporate interactions that comprise the oil industry, nor does it claim to be. Instead, the aim of this project has been to provide an examination of the state-corporate relations that contributed to the explosion of Deepwater Horizon and the

response to the spill. Based on this case study, the secondary objective of this project has been to draw out the implications of these federal-industry relations unveiled by the disaster for understanding the persistent and widespread criminogenic nature of the offshore oil industry. In order to further substantiate this concept, more research is necessary on the structure, function and variety of criminogenic industry structures beyond the offshore oil industry.

As the findings suggest, the federal government in coordination with BP and an array of private contractors worked to conceal the size of the spill and the devastating environmental effects of the oil by manipulating scientific evidence and enforcing a blackout of information and images throughout the Gulf region. Other studies should consider if these state-corporate techniques of censorship are unique to the response to Deepwater Horizon, or are part of a larger trend within the oil industry. As recent research into the politicization of climate change by Lynch, Burns and Stretesky (2011) suggests, the federal role in distorting scientific evidence is not an anomaly. Similarly, as research by Kramer and Michalowski (2012) demonstrates, the fossil fuel industry has funded and organized climate change denial movements. Censorship and propaganda, it seems, are increasingly common means of hiding the crimes of the powerful. Thus, future research should systematically examine the role of science in legitimating and concealing state-corporate crime.

It is also the task of future research to carry out additional case studies which document the nexus between government and the oil industry. In a recently presented paper at the 2012 North Central Sociological Association meetings, I tested the applicability of this model to other sectors within the oil industry through a case study of the hydraulic fracturing industry, particularly the ecological threat posed to the state of Michigan. Hydraulic fracturing, otherwise known as “fracking,” is a process used

to extract natural gas by pressurizing underground wells with water, sand, and a slurry of undisclosed toxic chemicals to break-up shale formations thereby releasing the trapped oil. Expanding the concepts of environmental state-corporate crime and criminogenic industry structures, an examination of the environmental, human, and social harm caused by hydraulic fracking can provide support for criminogenic nature of the oil industry on the whole. As with offshore oil drilling, the federal government has extensively facilitated the harm caused by the fracking industry. One example is the “Halliburton Loophole” to the Energy Policy Act of 2005, which provides an exemption for oil and gas drilling and extraction from requirements under the Safe Water Drinking Act, the Clean Air Act and the Clean Water Act. By examining the current legislative debates over fracking in Michigan, the role of the state government in controlling, constraining and preventing the environmental and human harm caused by hydraulic fracking can be evaluated.

Additionally, a comparative analysis of the operation of the offshore oil industry in different countries would help to provide insight into the varying role of the state in structuring industrial activities. For instance, many of the international oil companies such as BP operate in numerous state territories in which they are subjected to varying government regulations. Comparing different structures of government regulation within an industry can help to discern the factors which support or prevent against environmental and human harm.

Furthermore, as other case studies of state-corporate crime have suggested, additional industries might also be plagued by criminogenic state-corporate interactions. As the recent domestic and international financial meltdowns have illustrated, criminogenic state-corporate relations might not be exclusive to the oil industry, but might be a normal feature of other industries as well. Examining these

dynamics within, across and between industries can further test the usefulness of the concept of criminogenic industry structures.

BIBLIOGRAPHY

- Aldrich, Howard. 1979. *Organizations & Environments*. Englewood Cliffs, NY: Prentice- Hall Inc.
- Aravosis, John. 2011. "FLASHBACK: BP photoshops fake photo of oil spill crisis command center to make it look busy." April 20. *Americablog*.
<http://www.americablog.com/2010/07/bp-photoshops-fake-photo-of-command.html>
- Aulette, Judy and Raymond Michalowski. 1993. "Fire in Hamlet: A case study of state-corporate crime." Pp. 171-206 in *Political Crime in Contemporary America: A Critical Approach*, edited by K. Tunnell. New York: Garland.
- Baker Panel. 2007. *The Report of the BP U.S. Refineries Independent Safety Review Panel*.
http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/SP/STAGING/local_assets/assets/pdfs/Baker_panel_report.pdf
- Ball, Jeffrey. 2010. "Congress Questions Oil-Dispersant Usage." August 1. *The Wall Street Journal*.
<http://online.wsj.com/article/SB10001424052748703787904575403393553353172.html>
- Baltimore, Chris. 2007. "U.S. Lawmakers Query BP Editing of Alaska Spill Report." May 11. *Reuters*. <http://www.reuters.com/article/idUSN1148300820070512>
- Baram, Marcus. 2010. "Halliburton May be Culprit in Oil Rig Explosion." April 30. *Huffington Post*. http://www.huffingtonpost.com/2010/04/30/halliburton-may-be-culpr_n_558481.html
- Barrett, Thomas. 2006. "Oversight Hearing on BP's Pipeline Spills at Prudhoe Bay: What Went Wrong?" U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration. Before the Committee on Energy and Commerce Subcommittee on Oversight and Investigations.
http://www.alaskaforum.org/9_09_06/09_07_06%20US%20House%20Comm%20on%20E%20&%20C%20Hearing/09_07_06%20USDOT%20PHMSA%20Barrett%20Testimony%20at%20House%20E&C%20Comm%20Hearing%20.pdf
- Barstow, David, Laura Dodd, James Glanz, Stephanie Saul, and Ian Urbina. 2010. "Regulators Failed to Address Risks in Oil Rig Fail-Safe Device." June 20. *The New York Times*. <http://www.nytimes.com/2010/06/21/us/21blowout.html>

- Bartley, Ernest R. 1953. *The Tidelands Oil Controversy: A Legal and Historical Analysis*. Austin: University of Texas Press.
- Bergin, Tom. 2011. *Spills and Spin: The Inside Story of BP*. London: Random House.
- Biello, David. 2010. "Is Using Dispersants on the BP Gulf Oil Spill Fighting Pollution with Pollution?" June 18. *Scientific American*.
<http://www.scientificamerican.com/article.cfm?id=is-using-dispersants-fighting-pollution-with-pollution>
- Bolstad, Erika and Lesley Clark. 2010. "Gulf Oil Flow Was 12 Time More than Feds' Original Estimate." August 2. *McClatchy Newspapers*.
<http://www.mcclatchydc.com/2010/08/02/98512/government-revises-gulf-oil-flow.html>
- Boué, Juan Carlos and Edgar Jones. 2006. *A Question of Rigs, of Rules, or of Rigging the Rules? Upstream Profits and Taxes in US Gulf Offshore Oil and Gas*. Oxford: New York: Oxford University Press.
- BP. 2010. "BP Forges Ahead With Gulf of Mexico Oil Spill Response." April 25. BP Press Release.
<http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7061518>
- , 2009a. *Initial Exploration Plan, Mississippi Canyon Block 252*. Received by MMS February 23, 2009.
www.gomr.mms.gov/PI/PDFImages/PLANS/29/29977.pdf
- , 2009b. *Regional Oil Spill Response Plan- Gulf of Mexico*. Issued December 1, 2000; Revised July 30, 2009.
info.publicintelligence.net/BPGoMspillresponseplan.pdf
- "BP Confirms Successful Completion of Well Kill Operations in the Gulf of Mexico." 2010. BP Press Release. September 19.
<http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7065079>
- "The BP Texas City Disaster And Worker Safety." 2007. Hearing before the Committee on Education and Labor, US House of Representatives, 110th Congress, March 22, 2007. Washington, D.C.
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_house_hearings&docid=f:33902.pdf
- Bresnahan, Robyn. 2010. "BP accused of 'buying academic silence.'" July 22. *BBC News*. <http://www.bbc.co.uk/news/world-us-canada-10731408>

- Broder, John M. 2010. "Obama to Open Offshore Areas to Oil Drilling for First Time." March 31. *The New York Times*.
<http://www.nytimes.com/2010/03/31/science/earth/31energy.html>
- , 2008. "Environmentalists Wary of Obama's Interior Pick." December 18. *The New York Times*.
<http://www.nytimes.com/2008/12/18/us/politics/18salazarcnd.html>
- Bullard, Robert. 2010. "BP's Waste Management Plan Raises Environmental Justice Concerns." July 29. *Dissident Voice*.
<http://dissidentvoice.org/2010/07/bp%E2%80%99s-waste-management-plan-raises-environmental-justice-concerns/>
- Bullard, Robert and Al Huang. 2010. "Oil's toxic legacy not erased." August 13. *Politico*. www.politico.com/news/stories/0810/41043.html
- Burdeau, Cain and Seth Borenstein. 2010. "Where's the Oil? On the Gulf Floor, Scientists Say." September 14. *Associated Press*.
<http://www.usnews.com/science/articles/2010/09/14/wheres-the-oil-on-the-gulf-floor-scientists-say>
- Burkart, Karl. 2010. "BP redirects the flow of information with Google AdWords." June 8. *Mother Nature Network*. <http://www.mnn.com/green-tech/computers/blogs/bp-redirects-the-flow-of-information-with-google-adwords>
- Calamia, Joseph. 2010. "Meet the Oil-Covered, Symbols of the BP Oil Spill." June 7. *Discover Magazine*.
<http://blogs.discovermagazine.com/80beats/2010/06/07/meet-the-oil-covered-pelicans-symbols-of-the-bp-oil-spill/>
- Camilli, Richard, Christopher Reddy, Dana Yoerger, Benjamin Van Mooy, Michael Jakuba, James Kinsey, Cameron McIntyre, Sean Sylva, Maloney. 2010. "Tracking Hydrocarbon Plume Transport and Biodegradation at Deepwater Horizon." *Science* 330: 201(8):201-4.
- Casselman, Ben. 2010. "Rig Owner Had Rising Tally of Accidents." May 10. *The Wall Street Journal*.
<http://online.wsj.com/article/SB10001424052748704307804575234471807539054.html>
- Chambliss, William. 1989. "State-Organized Crime- The American Society of Criminology, 1988 Presidential Address." *Criminology* 27(2): 183-208.
- "Chemical Safety Board Investigation of BP Texas City Refinery Disaster Continues as Organizational Issues Are Probed." 2006. Press Release, October 30. U.S.

- Chemical Safety Board.
http://www.csb.gov/newsroom/detail.aspx?nid=215&SID=0&pg=1&F_All=y
- Clifford, Mary and Terry Edwards. 1998. "Defining 'Environmental Crime.'" In *Environmental Crime: Enforcement, Policy, and Social Responsibility*. Edited by Mary Clifford. Gaithersburg, Maryland: Aspen Publishers, Inc.
- Clinard, M. and R. Quinney. 1973. *Criminal Behavior Systems: A Typology*. New York: Holt, Rinehart and Winston.
- Clinard, Marshall and Peter Yeager. 2006. *Corporate Crime*. New Brunswick: Transaction Publishers.
- . 1980. *Corporate Crime*. New York: Free Press.
- Correal, Annie. 2010. "Amid Oil Spill Crisis, U.S. Authorities Search for Undocumented Cleanup Workers." June 4. *Feet in Two Worlds and El Diario/La Prensa*. <http://news.feetintwoworlds.org/2010/06/04/special-report-u-s-immigration-authorities-crack-down-on-gulf-oil-spill-cleanup-workers/>
- Cruciotti, Tricia and Rick Matthews. 2006. "The Exxon Valdez Oil Spill." Pp. 149-171 in *State- Corporate Crime: Wrongdoing at the Intersection of Business & Government*, edited by R. Michalowski and R. Kramer. New Brunswick: Rutgers University Press.
- Denzin, Norman. 1977. "Notes on the Criminogenic Hypothesis: A Case Study of the American Liquor Industry." *American Sociological Review* 42(6): 905-920.
- Det Norske Veritas. 2011. *Forensic Examination of Deepwater Horizon Blowout Preventer*. March 20. Final Report for United States Department of Interior, Bureau of Ocean Energy Management, Regulation, and Enforcement.
- DuBois, Shelley. 2010. "Who is Nalco?" June 15. *CNN Money*.
http://money.cnn.com/2010/06/14/news/companies/nalco_macondo_bp_spill.fortune/index.htm
- Dunlap, David W. 2010. "Putting a Face on the Gulf Oil Leak." June 4. *The New York Times*. <http://lens.blogs.nytimes.com/2010/06/04/assignment-35/?pagemode=print>
- Earth Justice. 2011. *The Chaos of Clean-up: Analysis of Potential Health and Environmental Impacts of Chemicals in Dispersant Products*.
http://earthjustice.org/sites/default/files/Oil_Dispersants_Report.pdf
- Edelhertz, H. 1970. *The Nature, Impact, and Prosecution of White Collar Crime*. Washington, DC: Government Printing Office.

- Edwards, David. 2010. "Expert suggests BP is hiding oiled animal carcasses." June 15. *Raw Story*. <http://www.rawstory.com/rs/2010/06/15/expert-suggests-bp-hiding-oiled-animal-carcasses/>
- Energy Information Administration, Office of Oil and Gas. 2005. "Overview of U.S. Legislation and Regulations Affecting Offshore Natural Gas and Oil Activity." www.eia.gov/pub/oil_gas/natural_gas/feature_articles/2005/offshore/offshore.pdf
- Engelberg, Stephen. 2010. "Photographer Briefly Detained by Police Near BP's Texas City Refinery." July 2. *ProPublica*. <http://www.propublica.org/article/photographer-detained-briefly-by-bp-and-local-police>
- Engler, Robert. 1961. *The Politics of Oil: Private Power and Democratic Directions*. Chicago: University of Chicago Press.
- Ermann, M. David and Richard Lundmann. 1982. *Corporate Deviance*. New York: Holt, Rinehart and Winston.
- Esman, Marjorie R. 2010. "Open Letter Concerning Media and Public Access to BP Oil Spill." June 28. American Civil Liberties Union of Louisiana. www.laclu.org/PDF_documents/Media_Public_Access_Oil_Spill_Letter_062810.pdf
- Farberman, Harvey. 1975. "A Criminogenic Market Structure: the Automobile Industry." *The Sociological Quarterly* 16(4):438-457.
- Freudenberg, William and Robert Gramling. 1994. *Oil in troubled waters: perceptions, politics and the battle over offshore drilling*. Albany: State University of New York Press.
- Friedrichs, D.O. 2007. *Trusted Criminals: White Collar Crime in Contemporary Society*. 3rd ed. Belmont, CA: Thomson Wadsworth.
- Fitzgerald, Edward A. 2001. *The Seaweed Rebellion: Federal-State Conflicts over Offshore Energy Development*. Lanham, MA: Lexington Books.
- Frohne, Lauren and Jessey Dearing. 2010. "BP oil spill contract and letter cloud media access." May 31. *News21*, The University of North Carolina at Chapel Hill. <http://unc.news21.com/index.php/powering-a-nation-blog/bp-oil-spill-contract-and-letter-cloud-media-access.html>
- Geis, Gilbert. 1977. "The Heavy Electrical Equipment Antitrust Cases of 1961." Pp 117-132 in *White-Collar Crime: Offenses in Business, Politics and the Professions*, edited by G. Geis and R.F. Meier. New York: The Free Press.

- George, Alexander and Andrew Bennett. 2005. *Case Studies and Theory Development in the Social Sciences*. Cambridge: MIT Press.
- Gibbs, Carole, Meredith Gore, Edmund McGarrell and Louie Rivers III. 2010. "Introducing Conservation Criminology: Towards Interdisciplinary Scholarship on Environmental Crimes and Risks." *British Journal of Criminology* 50: 124-144.
- Gillis, Justin. 2010. "Giant Plumes of Oil Forming Under the Gulf." May 16. *The New York Times*.
<http://query.nytimes.com/gst/fullpage.html?res=9E0CE4DA123CF935A25756C0A9669D8B63>
- Gold, Russell and Ben Casselman. 2010. "Drilling Process Attracts Scrutiny in Rig Explosion." April 30. *The Wall Street Journal*.
<http://online.wsj.com/article/SB10001424052748703572504575214593564769072.html>
- Gold, Russell, Ben Casselman, and Guy Chazan. 2010. "Leaking Oil Well Lacked Safeguard Device." April 28. *The Wall Street Journal*.
<http://online.wsj.com/article/SB10001424052748704423504575212031417936798.html>
- Gold, Russell and Stephen Power. 2010. "Oil Regulator Ceded Oversight to Drillers." May 7. *The Wall Street Journal*.
http://online.wsj.com/article/SB10001424052748704370704575228512237747070.html?mod=WSJ_hps_MIDDLESecondNews
- Government Accountability Office. 2010. *Oil and Gas Management: Interior's Oil and Gas Production Verification Efforts Do Not Provide Reasonable Assurance of Accurate Measurement of Production Volumes*.
www.gao.gov/new.items/d10313.pdf
- , 2008. *Data Management Problems and Reliance on Self-Reported Data for compliance Efforts Put MMS Royalty Collections at Risk*.
www.gao.gov/assets/100/95734.pdf
- , 2007. *Royalties Collection: Ongoing Problems with Interior's Efforts to Ensure A Fair Return for Taxpayers Require Attention*.
www.gao.gov/new.items/d07682t.pdf
- , 2003. *Mineral Revenues: A More Systematic Evaluation of the Royalty-in-Kind Pilots is Needed*. www.gao.gov/new.items/d03296.pdf

- Gramling, Robert. 1996. *Oil on the Edge: Offshore Development, Conflict, Gridlock*. Albany: State University of New York Press.
- Grant, Miles. 2010. "BP Can't Be Left in Charge of Gulf Coast Crime Scene." May 19. National Wildlife Federation. <http://www.nwf.org/News-and-Magazines/Media-Center/News-by-Topic/Wildlife/2010/05-19-10-BP-Cant-Be-Left-in-Charge-of-Gulf-Coast-Crime-Scene.aspx>
- Graves, Garrett. 2011. "Status of the Deepwater Horizon Natural Resource Damage Assessment." June 28. Testimony to the United State Senate Committee on Environment and Public Works, Subcommittee on Water and Wildlife. http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=239a26fa-b93f-4587-89af-0ace6dda0cf0
- Green, Penny and Tony Ward. 2004. *State Crime: Governments, Violence and Corruption*. London: Pluto Press.
- . 2000. "State Crime, Human Rights, and the Limits of Criminology." *Social Justice*. 27(1): 101-115.
- Greenmeier, Larry. 2010. "Gulf Spillover: Will BP's Deepwater Disaster Change the Oil Industry." June 7. *Scientific American*. <http://www.scientificamerican.com/article.cfm?id=molotch-deepwater-environmental-sociology>
- Halliburton. 2012. "History of Halliburton." <http://www.halliburton.com/aboutus/default.aspx?navid=970&pageid=2312>
- Halsey, Mark. 1997. "Environmental Crime: Towards an Eco-Human Rights Approach." *Current Issues in Criminal Justice* 8(3): 217-242.
- Hammer, David. 2010. "5 key human errors, colossal mechanical failure led to fatal Gulf oil rig blowout." September 5. *The Times-Picayune*. http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/09/5_key_human_errors_colossal_me.html
- Harkinson, Josh. 2010a. "'The rig's on fire! I told you this was gonna happen!'" June 7. *Mother Jones*. <http://motherjones.com/blue-marble/2010/06/rigs-fire-i-told-you-was-gonna-happen>
- . 2010b. "Steven Chu's Ties to BP." May 26. *Mother Jones*. <http://motherjones.com/blue-marble/2010/05/steven-chus-ties-bp>
- . 2008. "Is Steven Chu BFF with BP?" December 18. *Mother Jones*. <http://motherjones.com/politics/2008/12/steven-chu-bff-bp>

- Hays, Kristen. 2010. "U.S. says BP permanently "kills" Gulf of Mexico well." September 19. *Reuters*. <http://www.reuters.com/article/2010/09/19/us-oil-spill-kill-idUSTRE68H22Y20100919>
- Hazen, Terry C., et al. 2010. "Deep-Sea Oil Plume Enriches Indigenous Oil-Degrading Bacteria." August 24. *Science Express* 330(6001):204-208.
- Hillyard, Paddy, Christina Pantazis, Steve Tombs and Dave Gordon (Eds). 2004. *Beyond Criminology: Taking Crime Seriously*. London: Pluto Press
- Hough, Andrew. 2010. "BP admits it 'Photoshopped' official images as oil spill 'cut and paste' row escalates." July 22. *The Telegraph*. <http://www.telegraph.co.uk/earth/energy/oil/7904221/BP-admits-it-Photoshopped-official-images-as-oil-spill-cut-and-paste-row-escalates.html>
- Hutchinson, Peter. 2010. "BP under fire over 'photoshopped' image of oil spill in command centre." July 21. *The Telegraph*. <http://www.telegraph.co.uk/earth/energy/oil/7901935/BP-under-fire-over-photoshopped-image-of-oil-spill-command-centre.html>
- "Investigation Report: Refinery Explosion and Fire." 2007. U.S. Chemical Safety and Hazard Investigation Board. <http://www.csb.gov/assets/document/CSBFinalReportBP.pdf>
- Izon, David, E.P. Danenberger, and Melinda Mayes. 2007. "Absence of fatalities in blowouts encouraging in MMS study of OCS incidents 1992-2006." *Well Control*. Pp. 84-90.
- Jackson, Lisa P. 2010a. "Letter from Lisa P. Jackson, EPA Administrator, to David Rainey, V.P. of Gulf of Mexico Exploration, BP Exploration and Production." May 26. <http://www.epa.gov/bpspill/dispersants/Rainey-letter-052610.pdf>
- , 2010b. "Statement by EPA Administrator Lisa P. Jackson from Press Conference on Dispersant Use in the Gulf of Mexico with US Coast Guard Rear Admiral Landry." May 24. www.epa.gov/bpspill/dispersants/statement-dispersant-use-may24.pdf
- Jamail, Dahr. 2011. "Oil is resurfacing again not far from the location of the BP Macondo Well off the Gulf of Mexico, 15 months on." September 1. *Al Jazeera*. <http://english.aljazeera.net/news/americas/2011/09/201191163236563698.html>
- Jealous, Benjamin Todd. 2010. "NAACP: What we want to see from BP." July 9. National Association for the Advancement of Colored People. <http://www.thegrio.com/opinion/naacp-what-we-want-to-see-with-bp.php>

- Johnson, Brad. 2010a. "BP Launches Effort to Control Scientific Research of Oil Disaster." July 16. *Think Progress*.
<http://thinkprogress.org/economy/2010/07/16/108271/bp-closed-research/>
- . 2010b. "BP's Contractor Army." July 1. *Think Progress*.
<http://thinkprogress.org/report/bp-contractors/?mobile=nc>
- Jordans, Frank and Garance Burke. 2010. "Rig Had History of Spills, Fires, Before Big 1." April 30. *The Associated Press*.
http://seattletimes.nwsourc.com/html/business/technology/2011748727_apusgulf_oilspilltherig.html
- Juhasz, Antonia. 2011. *Black Tide: The Devastating Impact of the Gulf Oil Spill*. Hoboken, NJ: John Wiley and Sons.
- Kalen, Sam. 2010. "The BP Macondo Well Exploration Plan: Wither the Coastal Zone Management Act?" *The Environmental Law Reporter* 40: 11079-11083.
- Kendall, Mary L. 2010. "Testimony of Mary L. Kendall, Acting Inspector General for the Department of Interior Before the House Committee on Natural Resources, Subcommittee on Energy and Mineral Resources." June 17, 2010.
<http://www.doioig.gov/images/stories/KendallTestimony17June2010.pdf>
- "Key Findings of Internal Report on Alaska Spill." 2007. *Reuters*. May 16.
<http://www.reuters.com/article/idUSN1622911520070516>
- Kirkham, Chris. 2010. "Oil cleanup security details in St. Bernard Parish overseen by company with ties to sheriff." October 15. *The Times-Picayune*.
http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/10/st_bernard_parishoff-duty_depu.html
- Kramer, Ronald. 2010. "From Guernica to Hiroshima to Baghdad: the normalization of the terror bombing of civilians." Pp.118-133 in *State Crime in the Global Age*, edited by W. Chambliss, R. Michalowski and R. Kramer. Portland: Willan Publishing.
- . 2006. "The Space Shuttle Challenger Explosion." Pp. 27-44 in *State-Corporate Crime: Wrongdoing at the Intersection of Business & Government*, edited by R. Michalowski and R. Kramer. New Brunswick: Rutgers University Press.
- . 1992. "The space shuttle *Challenger* explosion: A case study of state-corporate crime." Pp. 214-243 in *White Collar Crime Reconsidered*, edited by K. Schlegel and D. Weisburd. Boston: Northwestern University Press.
- . 1984. "Corporate Criminality: The Development of an Idea." Pp 13-37 in *Corporations as Criminals*, edited by E. Hochstedler. Sage Publications.

- , 1982. "Corporate crime: An organizational perspective." Pp. 75-94 in *White Collar and Economic Crime*, edited by P. W. Wickman and T.B. Daily. Lexington, MA: Lexington Books.
- Kramer, Ronald and Raymond Michalowski. 2012. "Is global warming a state-corporate crime?" Forthcoming in *Climate Change, Crime and Criminology*, edited by R. White. New York: Springer.
- , 2005. "War, aggression and state crime: A criminological analysis of the invasion and occupation of Iraq." *British Journal of Criminology* 45: 446-469.
- , 1990. "Toward an Integrated Theory of State-Corporate Crime." Paper presented at a meeting of the American Society of Criminology, Baltimore, MD, November.
- Kramer, Ronald, Raymond Michalowski, and David Kauzlarich. 2002. "The origins and development of the concept and theory of state-corporate crime." *Crime & Delinquency* 48: 263-282.
- Kramer, Ronald, Raymond Michalowski and Dawn Rothe. 2005. "The Supreme International Crime": How the U.S. War in Iraq Threatens the Rule of Law." *Social Justice* 32(2): 52-81.
- Kauzlarich, David and Ronald Kramer. 1998. *Crimes of the America Nuclear State: At Home and Abroad*. Boston: Northeastern University Press.
- Kauzlarich, David and Rick Matthews. 2006. "Taking Stock of Theory and Research." In *State-Corporate Crime: Wrongdoing at the Intersection of Business & Government*. Edited by Michalowski, Raymond and Ronald Kramer. New Brunswick: Rutgers University Press. Pp. 239-249.
- Leonard, William N. and Marvin Glenn Weber. 1970. "Automakers and Dealers: A Study of Criminogenic Market Forces." *Law & Society Review* 4(3): 407-424.
- Leopold, Jason. May 19, 2010. "How Bush's DOJ Killed a Criminal Probe Into BP That Threatened to Net Top Officials." *Truthout*. Accessed June 17, 2010. <http://www.truth-out.org/how-bushs-doj-killed-a-criminal-probe-into-bp-that-threatened-net-top-officials59648>
- "Letter to President Obama." 2010. Audubon, Clean Water Action, Earth Justice, Environmental Defense Fund, Friends of the Earth, Gulf Restoration Network, National Wildlife Federation, Natural Resources Defense Council, Physicians for Social Responsibility, Sierra Club. May 19. www.nwf.org/~media/PDFs/Global-Warming/Letter-to-president-May-19-2010.ashx

- Lichtblau, Eric. 2008. "In Justice shift, Corporate Deals Replace Trials." April 9. *The New York Times*.
http://www.nytimes.com/2008/04/09/washington/09justice.html?_r=4&hp=&page-wanted=print&oref=slogin
- Lindner, Bill. 2010. "The Bush Administration's Department of Justice Sheltered BP Executives From Criminal Probe." May 23. *Global Research*.
<http://www.globalresearch.ca/index.php?context=va&aid=19290>
- Lipton, Eric and John Broder. 2010. "Regulator Deferred to Oil Industry On Rig Safety." May 7. *The New York Times*.
<http://www.nytimes.com/2010/05/08/us/08agency.html?hp>
- Lyall, Sarah. 2010. "In BP's Record, a History of Boldness and Costly Blunders." July 12. *The New York Times*. http://www.nytimes.com/2010/07/13/business/energy-environment/13bprisk.html?_r=1
- Lynch, Michael. 1990. "The Greening of Criminology: A Perspective on the 1990s." *Critical Criminologist* 2:1-5.
- Lynch Michael, Ronald Burns and Paul Stretesky. 2011. "Global warming and state-corporate crime: The politicization of global warming under the Bush administration." *Crime, Law, Social Change* 54: 213-239.
- Lynch, Michael and Paul Stretesky. 2003. "The Meaning of Green: Contrasting Criminological Perspectives." *Theoretical Criminology* 7: 217-238.
- Lysiak, Matthew. 2010. "Dying, dead marine wildlife paint dear, morbid picture of Gulf Coast following oil spill." June 2. *New York Daily News*.
http://articles.nydailynews.com/2010-06-02/news/27066030_1_oil-spill-pelicans-dead-animals
- "Management Systems Review: BP America Inc. Final Report." 2007. Booz Allen Hamilton Report. March 30.
<http://archives.energycommerce.house.gov/Investigations/BP/Booz%20Allen%20Report.pdf>
- Markey, Edward. 2010. "Letter to the USCG asking why BP had been exceeding the dispersant limits set in the May 26 directive." June 24.
<http://markey.house.gov/document/2010/letter-rep-markey-sent-letters-uscg-asking-why-bp-had-been-exceeding-dispersant-limits>
- Mason, Betsy. 2010a. "Photoshop of Horrors: Wired Readers Show BP How It's Done." July 28. *Wired*. <http://www.wired.com/wiredscience/2010/07/bp-reader-photoshop/>

- , 2010b. "Help BP Learn How to Use Photoshop." July 23. *Wired*.
<http://www.wired.com/wiredscience/2010/07/show-bp-how-to-use-photoshop/>
- Mattera, Phil. 2010. "Bad Karma in the Gulf of Mexico Oil Disaster." May 7. *Dirt Diggers Digest*. <http://dirtdiggersdigest.org/archives/1353>
- Matthews, Rick and David Kauzlarich. 2000. "The crash of *ValuJet* Flight 592: A case study in state-corporate crime." *Sociological Focus* 33: 281-298.
- McCarthy, Michael. 2010. "The plight of the pelican is the poignant symbol of this disaster." June 7. *The Independent*.
<http://www.independent.co.uk/news/world/americas/the-plight-of-the-pelican-is-the-poignant-symbol-of-this-disaster-1993269.html>
- McClelland, Mac. 2011a. "BP Still Doesn't Want You to See It's Tarballs." March 30. *Mother Jones*. <http://motherjones.com/rights-stuff/2011/03/BP-oil-tarballs-louisiana>
- , 2010b. "La. Police Doing BP's Dirty Work." June 22. *Mother Jones*.
<http://motherjones.com/rights-stuff/2010/06/BP-louisiana-police-stop-activist>
- , 2010c. "It's BP's Oil." May 24. *Mother Jones*.
<http://motherjones.com/environment/2010/05/oil-spill-bp-grand-isle-beach>
- McNutt, Marcia. 2010. "Email to Plume Team, Subject: Pending Developments." May 29. U.S. Geological Survey, Flow Rate Technical Group.
<http://salsa.democracyinaction.org/dia/track.jsp?v=2&c=9zeW330X%2BCpyeMUEz9A0mfZNDfJAZqwx>
- Mehta, Aaron and John Solomon. 2010. "Haphazard Firefighting Might Have Sunk BP Oil Rig." July 27. *Center for Public Integrity*.
<http://www.iwatchnews.org/2010/07/28/2600/haphazard-firefighting-might-have-sunk-bp-oil-rig>
- Meier, Barry. 2010. "Owner of Exploded Rig is Known for Testing Rules." July 7. *The New York Times*.
<http://www.nytimes.com/2010/07/08/business/global/08ocean.html?pagewanted=all>
- Merritt, Carolyn M. 2007. "Testimony of Carolyn W. Merritt, Chairman and Chief Executive Officer U.S. Chemical Safety Board, Before the U.S. House of Representatives Committee on Energy and Commerce, Subcommittee on Investigations and Oversight." May 16, 2007.
http://www.csb.gov/assets/document/MerrittEnergyCommerceTestimony5_16_07.pdf

- Michalowski, Raymond and Ronald Kramer (Eds). 2006. *State-Corporate Crime: Wrongdoing at the Intersection of Business & Government*. New Brunswick: Rutgers University Press.
- Miller, Daniel S. 1984. "Offshore Federalism: Evolving Federal-State Relations in Offshore Oil and Gas Development." *Ecology Law Quarterly* 11: 401-450.
- Milner, John E. 2010. "RE: Retention for Consulting and Expert Witness Services ("Retention Agreement") April 20, 2010 Transocean Horizon Incident." Brunini, Grantham, Grower & Hewes, PLLC. June 28, 2010.
http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/22_07_bp_contract.pdf
- Mohr, Holbrook, Justin Pritchard and Tamara Lush. 2010. "BP Spill Response Plans Severely Flawed." June 6. *MSNBC*.
http://www.msnbc.msn.com/id/37599810/ns/disaster_in_the_gulf/t/bp-spill-response-plans-severely-flawed/#
- Molotch, Harvey. 1970. "Oil in Santa Barbara and Power in America." *Sociological Inquiry* 40:131-44.
- Mufson, Steven. 2011. "BP, Transocean, Halliburton Blamed by Presidential Gulf Oil Spill Commission." January 6. *The Washington Post*.
<http://www.washingtonpost.com/wp-dyn/content/article/2011/01/05/AR2011010504631.html>
- Nalco. 2010. "Corexit Ingredients." <http://www.nalco.com/news-and-events/4297.htm>
- "National Contingency Plan Product Schedule Toxicity and Effectiveness Summaries." 2011. The Environmental Protection Agency.
http://www.epa.gov/oem/content/ncp/tox_tables.htm
- National Press Photographers Association. 2010. "NPAA Asks Obama To Rescind Media Ban, Reduce Safety Zone." July 6.
http://nppa.org/news_and_events/news/2010/07/oil.html
- National Wildlife Federation. 2010. *Assault on America: A Decade of Petroleum Company Disaster, Pollution, and Profit*. <http://www.nwf.org/News-and-Magazines/MediaCenter/Reports/Archive/2010/~media/PDFs/Global%20Warming/Reports/Asault-on-America-A-Decade-of-Petroleum-Company-Disaster.ashx>
- Oil Budget Calculator, Deepwater Horizon: Technical Documentation*. 2010. The Federal Interagency Solutions Group, Oil Budget Calculator Science and Engineering Team.
www.restorethegulf.gov/sites/default/files/documents/pdf/OilBudgetCalc_Full_HQ-Print_111110.pdf

- “Oil Pollution Act Overview.” 2012. Environmental Protection Agency. <http://www.epa.gov/osweroe1/content/lawsregs/opaover.htm>
- Olien, Roger M. 2002. “It’s not your father’s oil industry anymore.” *The Quarterly Review of Economics and Finances* 42: 273-284.
- Palast, Greg. 2011. *Vultures’ Picnic: In Pursuit of Petroleum Pigs, Power Pirates, and High-Finance Carnivores*. New York: Penguin Group.
- Pelofsky, Jeremy and Tom Daggett. 2008. “Bush lifts offshore drilling ban in symbolic move.” July 14. *Reuters*. <http://www.reuters.com/article/2008/07/14/us-usa-energy-idUSN1437813720080714>
- Peters, Jeremy W. 2010. “Efforts to Limit the Flow of Spill News.” June 9. *The New York Times*. <http://www.nytimes.com/2010/06/10/us/10access.html?pagewanted=all>
- Philips, Matthew. 2010. “BP’s Photo Blockade of the Gulf Oil Spill.” May 26. *Newsweek*. <http://www.thedailybeast.com/newsweek/2010/05/26/the-missing-oil-spill-photos.html>
- Priest, Tyler. 2007. *The Offshore Imperative: Shell Oil’s Search for Petroleum in Postwar America*. Texas A&M University Press.
- , 2007b. “Extraction Not Creation: The History of Offshore Petroleum in the Gulf of Mexico.” Paper presented to Oxford University Press on behalf of the Business History Conference.
- Project on Government Oversight. 2008. *Drilling the Taxpayer: Department of Interior’s Royalty-In-Kind Program*. <http://www.pogo.org/pogo-files/reports/natural-resources/drilling-the-taxpayer/nr-rik-20080918.html>
- Public Employees for Environmental Responsibility. 2011. “Allegations of Scientific and Research Misconduct: Falsification of the Scientific Product of the Flow Rate Technical Group’s Plume Team in Order to Produce Underestimates of the Oil Leak Rate from the Deepwater Horizon.” January 23, 2011. <http://salsa.democracynaction.org/dia/track.jsp?v=2&c=Ubl6kFuMbaiiq5iphELTefZNDfJAZqwx>
- , 2010. “Lift Gag Order Muzzling NOAA Scientists: Rulemaking Petition to Commerce Secretary to Rescinding Bush-Era Prior Restraints.” July 12, 2010. http://www.peer.org/news/news_id.php?row_id=1372
- , 2008 “Probe Demanded into Shutdown of BP Alaska Oil Case.” November 11, 2008. http://www.peer.org/news/print_detail.php?row_id=1123

- Public Broadcasting Station. 2010. "The Spill." Air date October 16, 2010.
<http://www.pbs.org/wgbh/pages/frontline/the-spill/>
- "The 2006 Prudhoe Bay Shutdown: Will Recent Regulatory Changes and BP Management Reforms Prevent Future Failures?" 2007. Hearing Before the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, House of Representatives, 110th Congress. May 16, 2007.
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_house_hearings&docid=f:41657.pdf
- Putt, Russell. 2010. "Email, RE Action: proposal for gap assessment workshop: discussion of biological/ecological studies program- minutes and actions." June 24, 2010. <http://www.guardian.co.uk/environment/interactive/2011/apr/15/bp-internal-meeting-notes>
- Ragoonanan-Jalim, Karen. 2010. "Email, Subject: Discussion of biological/ecological studies program- minutes and actions." June 22, 2010.
<http://www.guardian.co.uk/environment/interactive/2011/apr/15/bp-internal-meeting-notes>
- Ramseur, Jonathan L. 2010. *Deepwater Horizon Oil Spill: The Fate of the Oil*. December 16, 2010. Congressional Research Service.
www.fas.org/sgp/crs/misc/R41531.pdf
- Rawsley, Adam. 2010. "BP Hires Mercs to Block Oily Beaches" June 15. *Wired*.
http://www.wired.com/dangerroom/2010/06/bp-hires-merc-to-block-oily-beaches/?utm_source=twitterfeed&utm_medium=twitter#ixzz0qvQN3iIg
- Reddy, Christopher and Richard Camilli. 2012. "Science out of Context." June 3. *The Boston Globe*.
<http://bostonglobe.com/opinion/2012/06/02/reddy/Gt82ZS7yoi5sHTgDG5SLkN/story.html>
- Rosenfeld, Lance. 2010. "ProPublica Photographer: I Was Followed by BP Security and Then Detained by Police." July 7. *ProPublica*.
<http://www.propublica.org/article/photographer-tells-of-being-followed-by-bp-security-and-then-detained>
- Rothe, Dawn. 2009. *State Criminality: The Crime of All Crimes*. New York: Rowman and Littlefield Publishers, Inc.
- , 2006. "Iraq and Halliburton." Pp. 215-238 in *State-Corporate Crime: Wrongdoing at the Intersection of Business & Government*, edited by R. Michalowski and R. Kramer. New Brunswick: Rutgers University Press.

- Rothe, Dawn and Christopher Mullins. 2009. "Toward a Criminology for International Criminal Law: An Integrated Theory of International Criminal Violations." *International Journal of Comparative and Applied Criminal Justice* 33.
- Rothe, Dawn and Ross Jeffrey Ian. 2010. "Private military contractors, crime, and the terrain of unaccountability." *Justice Quarterly* 27: 593-617.
- Samandych, Russell and Rodney Kueneman. 2010. "The Canadian-Alberta tar sands: a case study of state-corporate environmental crime." Pp. 87-109 in *Global Environmental Harm: Criminological Perspectives*, edited by Rob White. Portland: Willian Publishing.
- Scahill, Jeremy. 2010. "BP and US Government 'Command Center' Guarded by Company From Afghan Embassy Hazing Scandal." May 28. *The Nation*. <http://www.thenation.com/blog/bp-and-us-government-command-center-guarded-company-afghan-embassy-hazing-scandal>
- Schor, Elana. 2010a. "How Has BP's Oily Waste Escaped 'Hazardous' Label?" July 20. *The New York Times*. <http://www.nytimes.com/gwire/2010/07/20/20greenwire-how-has-bps-oily-waste-escaped-hazardous-label-54942.html>
- , 2010b. "Ingredients of Controversial Dispersant Used on Gulf Spill are Secrets No More." June 9. *The New York Times*. <http://www.nytimes.com/gwire/2010/06/09/09greenwire-ingredients-of-controversial-dispersants-used-42891.html>
- Schrager, Laura Shill and Short, James F. 1978. "Toward a Sociology of Organizational Crime." *Social Problems* 25(4): 407-419.
- Schrope, Mark. 2011. "Oil-spill research funds begin to flow." September 1. *Nature*. <http://www.nature.com/news/2011/110901/full/news.2011.516.html>
- , 2010. "Deepwater Horizon: A Scientist at the Centre of the Spill." *Nature* 466(5): 680-4.
- Schwendinger, Herman and Julia Schwendinger. 1970. "Defenders of Order or Guardians of Human Rights?" *Issues in Criminology* 5(2): 123-157.
- Shapiro, Joseph. 2010a. "Blast Survivors Kept Isolated On Gulf For Hours." May 10. *National Public Radio*. <http://www.npr.org/2010/05/10/126667241/blast-survivors-kept-isolated-on-gulf-for-hours>
- , 2010b. "Rig Survivors Felt Coerced To Sign Waivers." May 6. *National Public Radio*. <http://www.npr.org/templates/story/story.php?storyId=126565283&ps=rs>

- Sheppard, Kate. 2010. "BP Bars Photos of Dead Wildlife as Bodies Pile Up." June 2. *Mother Jones*. <http://motherjones.com/blue-marble/2010/06/bp-bars-photos-dead-wildlife-bodies-pile>
- Solomon, John and Aaron Mehta. 2010. "Coast Guard Logs Reveal Early Spill Estimates of 8,000 Barrels a Day." June 3. *Center for Public Integrity*. <http://www.iwatchnews.org/2010/06/03/2663/coast-guard-logs-reveal-early-spill-estimate-8000-barrels-day>
- Soraghan, Mike. 2010. "As Oil Drifts Toward Gulf Shores, Oil Companies Brace for Political Whirlwind." April 29. *The New York Times*. <http://www.nytimes.com/gwire/2010/04/29/29greenwire-as-spill-drifts-toward-gulf-shores-oil-compani-89449.html?pagewanted=print>
- South, Nigel. 1998. "A Green Field for Criminology? A Proposal for a Perspective." *Theoretical Issues in Criminology* 22: 211-233.
- Stretesky, Paul and Michael Lynch. 1999. "Corporate Environmental Violence and Racism." *Crime, Law & Social Change* 30: 163-184.
- Sutherland, Edwin H. 1983. *White Collar Crime: The Uncut Version*. New Haven: Yale University Press.
- , 1940. "White-Collar Criminality." *American Sociological Review* 5(1): 1-12.
- Sutherland, Edwin H. and Donald Cressey. 1978. *Criminology*. 10th ed. Philadelphia: J.B. Lippincott Co.
- Tappan, P. W. 1947. "Who is the Criminal?" *American Sociological Review*. 12 (1): 96-102.
- Tiftt, Larry and Dennis Sullivan. 1980. *The Struggle to be Human: Crime, Criminology, and Anarchism*. United Kingdom: Cienfuegos Press.
- Timmons, Heather. 2007. "Inquiry Faults Management at BP in Blast That Killed 15." January 17. *The New York Times*. <http://www.nytimes.com/2007/01/17/business/worldbusiness/17baker.html?adxnrl=1&adxnrlx=1292410943-QqBpsuLw7FN88QD0vpp3ZQ>
- Transocean. 2011. "Deepwater Horizon Drills World's Deepest Oil & Gas Well." <http://www.deepwater.com/fw/main/IDeepwater-Horizon-i-Drills-Worlds-Deepest-Oil-and-Gas-Well-419C151.html>
- U.S. Coast Guard. 2011. *BP Deepwater Horizon Oil Spill Incident Specific Preparedness Review, Final Report*. www.uscg.mil/foia/docs/DWH/BPDWH.pdf

- 2010. *Report of Investigation into the Circumstances Surrounding the Explosion, Fire, Sinking and Loss of Eleven Crew Members Aboard the Mobile Offshore Drilling Unit Deepwater Horizon in the Gulf of Mexico April 20-22, 2010*, Volume I. Available online at:
<http://www.scribd.com/doc/53653055/Report-of-Investigation-into-the-Circumstances-Surrounding-the-Explosion-Fire-Sinking-and-Loss-of-Eleven-Crew-Members-Aboard-the-MOBILE-OFFSHORE-DRI>
- U.S. Department of the Interior, Office of the Inspector General, Minerals Management Service. 2010. *Investigative Report: Island Operating Company et al.* <http://www.doioig.gov/images/stories/reports/pdf/IslandOperatingCo.pdf>
- 2008. *Investigative Report: MMS Oil Marketing Group- Lakewood*. September 9, 2008. <http://www.doioig.gov/images/stories/reports/pdf//RIKinvestigation.pdf>
- U.S. Environmental Protection Agency. 2010a. "Corexit EC9500A, NCP Product Schedule." <http://www.epa.gov/oem/content/ncp/products/corex950.htm>
- 2010b. "Corexit EC9527A, NCP Product Schedule." <http://www.epa.gov/oem/content/ncp/products/corex952.htm>
- U.S. National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. January 2011. *Deep Water: The Gulf Oil Disaster and the Future of Offshore Oil Drilling, Report to the President.* www.oilspillcommission.gov/sites/default/files/documents/DEEPWATER_ReporttothePresident_FINAL.pdf
- 2010a. *Staff Working Paper No. 3: The Amount and Fate of the Oil.* www.oilspillcommission.gov/sites/default/files/documents/Updated%20Amount%20and%20Fate%20of%20the%20Oil%20Working%20Paper.pdf
- 2010b. *Staff Working Paper No. 4: The Use of Surface and Subsea Dispersants During the BP Deepwater Horizon Oil Spill.* Released October 6, 2010; Updated January 11, 2011. www.oilspillcommission.gov/sites/default/files/documents/Updated%20Dispersants%20Working%20Paper.pdf
- U.S. National Oceanic and Atmospheric Administration. 2010. "BP Deepwater Horizon Oil Budget: What Happened to the Oil?" August 4, 2010. http://www.noaanews.noaa.gov/stories2010/20100804_oil.html
- U.S. Occupational Safety and Health Administration. 2011. *Deepwater Horizon Oil Spill: OSHA's Role in the Response.* May 11, 2011. www.osha.gov/oilspills/dwh_oshareponse_0511a.pdf

- Urbina, Ian and Justin Gillis. 2010. "Workers on Oil Rig Recall a Terrible Night of Blasts." May 7. *The New York Times*.
<http://www.nytimes.com/2010/05/08/us/08rig.html?pagewanted=all>
- Van Den Heuvel, Grat. 2005. "The parliamentary enquiry on fraud in the Dutch construction Industry: Collusion as concept between corruption and state-corporate crime." *Crime, Law & Social Change* 44:133-151.
- Vaughan, Diane. 2007. "Beyond Macro- and Micro-Levels of Analysis, Organizations, and the Cultural Fix." Pp. 3-24 in *International Handbook of White-Collar and Corporate Crime*, edited by H. Pontell and G. Geis. New York: Springer.
- , 1996. *The Challenger Launch Decision: Risky Technology, Culture and Deviance and NASA*. Chicago: University of Chicago Press.
- Wald, Michael. 2010. "Despite Rule, BP Used Dispersant, Panel Finds." July 31. *The New York Times*.
<http://www.nytimes.com/2010/08/01/science/earth/01dispersants.html>
- Wang, Marian. 2010a. "In School Outreach, BP and NOAA 'Dispel Myths' About Dispersants, Subsurface Oil." October 4. *ProPublica*.
<http://www.propublica.org/blog/item/in-outreach-to-schools-bp-and-noaa-dispel-myths-about-dispersants-subsurface>
- , 2010b. "Scientists Allege Federal Gov't Tried to Muffle Plume Findings." August 10. *ProPublica*. <http://www.propublica.org/blog/item/scientists-allege-federal-govt-tried-to-muffle-plume-findings>
- , 2010c. "Gulf 'Safety Zones' Could Mean Penalties for Press and Public." July 6. *ProPublica*. <http://www.propublica.org/blog/item/gulf-safety-zones-restrict-access-with-criminal-penalties-for-press-and-public>
- , 2010d. "Gov't Watchdog: Offshore Drilling Regulator Has Too Few Inspectors and Poor Training." June 21. *ProPublica*.
<http://www.propublica.org/blog/item/watchdog-faults-offshore-drilling-regulators-and-industry-for-culture>
- Washburn, Jennifer. 2010. "Big Oil Goes to College: An Analysis of 10 Research Collaboration Contracts Between leading Energy Companies and Major U.S. Universities." *Center for American Progress*.
http://www.americanprogress.org/issues/2010/10/big_oil.html
- Watson, James and Al Armendariz. 2010. *Recovered Oil, Contaminated Materials and Liquid and Solid Wastes Management Directive*. June 29, 2010.
www.epa.gov/bpspill/waste/wastemanagementdirective_la.pdf

Welch, Michael. 2009. "Fragmented power and state-corporate killings: A critique of Blackwater in Iraq." *Crime, Law and Social Change* 51:351-364.

West Engineering Services. 2004. *Shear Ram Capabilities Study: For the U.S. Minerals Management Service*.
[www.mms.gov/tarprojects/463/\(463\)%20West%20Engineering%20Final%20Report.pdf](http://www.mms.gov/tarprojects/463/(463)%20West%20Engineering%20Final%20Report.pdf)

White, Rob. 2010. "Globalisation and environmental harm." Pp. 3-19 in *Global Environmental Harm: Criminological Perspectives*, edited by R. White. Portland: Willian Publishing.

-----, 2002. "Environmental Harm and the Political Economics of Consumption." *Social Justice* 29(1/2): 82-102.

White House. 2010. "President Obama's Oval Office Address on the BP Oil Spill: A Faith in the Future that Sustains us as a People." July 15, 2010.
<http://www.whitehouse.gov/blog/2010/06/16/president-obamas-oval-office-address-bp-oil-spill-a-faith-future-sustains-us-a-peopl>

Whyte, Dave. 2007. "The crimes of neo-liberal rule in occupied Iraq." *British Journal of Criminology* 47(2): 177-195.

-----, 2003. "Lethal regulation: State-corporate crime and the United Kingdom government's new mercenaries." *Journal of Law and Society* 30: 575-600.

Wilder, Robert J. 1993. "Sea- Change from Bush to Clinton: Setting a New Course for Offshore Oil Development and U.S. Energy Policy." *Journal of Environmental Law* 11(131): 131-173.

Wonders, Nancy and Solop, Fred. 1993. "Understanding the emergence of law and public policy: Toward a relational model of the state." Pp. 204-225 in *Making Law*, edited by W. Chambliss and M. Zatz. Bloomington: Indiana University Press.

Young, Abe Louise. 2010. "BP Hires Prison Labor to Clean Up Spill While Coastal Residents Struggle." July 21. *The Nation*.
<http://www.thenation.com/article/37828/bp-hires-prison-labor-clean-spill-while-coastal-residents-struggle>

Zabarenko, Deborah. 2010. "Microbes ate BP oil deep-water plume: study." August 24. *Reuters*. <http://www.reuters.com/article/2010/08/24/us-oil-spill-microbes-idUSTRE67N5CC20100824>

