

DIRTY WATER FRACKING OFFSHORE CALIFORNIA



ACKNOWLEDGEMENTS

Co-Author: Brian P. Segee, Staff Attorney, Environmental Defense Center

Co-Author: Elise O'Dea, UC Berkeley School of Law, 2015 and Law Clerk at the Environmental Defense Center

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EDC: A HISTORY OF ADVOCACY ON OFFSHORE OIL

Founded in 1977 in response to the 1969 Santa Barbara oil spill, the Environmental Defense Center fills a critical gap as the only non-profit environmental law firm between Los Angeles and San Francisco. Serving Ventura, Santa Barbara, and San Luis Obispo Counties, EDC provides public education, advocacy, and legal services to non-profit organizations dedicated to environmental quality and human health.

Protecting our coastal environment and communities from the risks and impacts of offshore oil development has been integral to EDC's work since our founding. In 1999, EDC led a successful statewide legal fight against federal offshore oil leases, preventing the extension of 36 leases for offshore oil production.¹ The leases had been issued between 1968 and 1984, but had never been developed. Representing a broad coalition of environmental organizations, EDC joined with the California Coastal Commission to file a lawsuit challenging the extension on the grounds that the federal Minerals Management Service had failed to let the Coastal Commission conduct a consistency review pursuant to the Coastal Zone Management Act, and had failed to conduct environmental review under the National Environmental Policy Act.²

The case was decided in EDC's favor at both the district court and appellate level. EDC's success was not only significant to the local community, but also established an important legal precedent by giving coastal states greater authority to review and prevent federal actions that could impact their communities and environments.

EDC's work has also been integral in efforts to improve regulatory oversight of air pollution and wastewater discharges from platforms located in federal waters.³ Through our representation of dozens of groups fighting offshore oil drilling, EDC's work has helped stop further oil development, prevent oil spills, protect threatened and endangered species, and reduce air and water pollution. In addition to protecting our local environment, EDC's offshore advocacy efforts have been motivated by a desire to reduce greenhouse gas emissions and to encourage the move away from fossil fuels and towards renewable energy sources.



EXECUTIVE SUMMARY

In DIRTY WATER: FRACKING OFFSHORE CALIFORNIA, the Environmental Defense Center (EDC) addresses the oil industry's use of hydraulic fracturing (*aka* fracking) and other forms of well stimulation from offshore platforms located within federal, Outer Continental Shelf (OCS) waters in the Santa Barbara Channel. The Santa Barbara Channel and the Channel Islands are renowned globally for their beauty, richness of wildlife, and overall health of the environment. Although fracking has been conducted off of California's shores for at least two decades, the practice was until recently largely unknown to state and federal regulators, as well as the general public.



Fracking has been conducted from platforms off California's coast for 20 years, but until this year was largely unknown to state and federal regulators and the public. © Linda Krop.

EDC's review and analysis of federal records received through the Freedom of Information Act (FOIA) show that at least 15 fracs have occurred offshore California, with several more proposals pending. More fracs have almost certainly been conducted, however, as federal regulators were until recently unaware that the practice was being used. The information currently available shows that the majority of fracs have occurred from platforms with a history of spills that are in close proximity to the Channel Islands National Marine Sanctuary and other ecologically important areas.

The revelation that fracking is occurring off California's shores comes three years after the largest offshore oil spill in our nation's history, the 2010 BP Deepwater Horizon disaster. Like the 1969 Santa Barbara oil spill, Deepwater Horizon occurred after federal regulators had granted the industry waivers or shortcuts from environmental and safety requirements. In its wake, the Obama administration claimed to launch the largest reform of offshore oil oversight in the nation's history.

Important aspects of the administration's effort, however, including reform of the Department of the Interior's (DOI) environmental analysis of OCS proposals under the National Environmental Policy Act (NEPA), remain unfulfilled. DOI's oversight (or lack thereof) of offshore fracking in the Santa Barbara Channel illustrates this lack of reform, and also raises questions of compliance with other major environmental laws including the Clean Water Act and Coastal Zone Management Act.



In order to guard against an offshore drilling disaster involving fracking off California's shores, EDC recommends that the Obama administration:

- Place a moratorium on offshore fracking and other forms of well stimulation unless and until such technologies are proven safe through a public and transparent comprehensive scientific review
- Prohibit the use of categorical exclusions (exemptions from environmental review) to authorize offshore fracking and other forms of well stimulation
- Formally evaluate offshore fracking and other forms of well stimulation through a Programmatic Environmental Impact Statement
- Initiate consistency reviews with the California Coastal Commission for all exploration plans, development plans, drilling or modification proposals involving fracking and other forms of well stimulation
- Ensure that all fracking proposals comply with the Endangered Species Act and Marine Mammal Protection Act
- Review and revise the Clean Water Act permit for offshore platforms to specifically address fracking and other forms of well stimulation



Both the devastating 1969 Santa Barbara oil spill and the 2010 BP Deepwater Horizon blowout occurred after federal regulators granted industry shortcuts from environmental safeguards. © Robert Sollen

With the 1969 oil spill, California's south central coast experienced the devastating impact of one of the largest environmental disasters in U.S. history. These communities learned first-hand what can happen when government agencies turn a blind-eye to industry practices. This year, with all levels of government awakening to the existing reality of fracking off our precious coastline, this is not the time to repeat the mistakes of the past, but rather to focus on solutions to help avoid the worst impacts of the accidents that are all but inevitable and all too often realized. This report has been designed to outline some of these essential solutions.

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INTRODUCTION

The Environmental Defense Center (EDC) analysis of federal government records received through the Freedom of Information Act (FOIA)⁴ reveals that the oil industry has been utilizing hydraulic fracturing (*aka* fracking) and related well stimulation techniques to increase oil production from oil platforms located off California's coastline for at least twenty years. The use of fracking off California's shores was largely unknown to federal and state regulators, as well as the general public, until two teams of investigative journalists reported on the issue in summer 2013.⁵



California's south central coast has long lived with the threats posed by offshore drilling. The realization that unregulated fracking is also taking place should serve as a wake-up call to ensure the protection of our environment and local communities. © Linda Krop.

Fracking involves pumping a mixture of water, sand (known as "proppant"), and chemicals down a well at extremely high pressures to break apart a hydrocarbon-bearing geologic formation and improve rates of oil or natural gas production.⁶ Although rudimentary forms of fracking have existed for decades, today's technology is the first to successfully produce large quantities of oil and gas from the dense sedimentary rock known as shale.⁷

These advancements, together with other improvements in horizontal drilling technologies allowing access to larger areas of the formation, have served to vastly increase shale oil and gas production during the past decade.⁸ In 2000, shale gas comprised 1 percent of domestic supplies; today, that figure exceeds 35 percent and is expected to grow further.⁹ According to industry, nine of ten oil and gas wells today require some form of fracture stimulation in order to be economically viable.¹⁰

"Oil and gas development, whether conventional or shale oil and gas, poses inherent environmental and public health risks, but the extent of those risks associated with shale oil and gas development is unknown."

- U.S. Government Accountability Office¹⁸

The Energy Information Administration (EIA) recently identified California's Monterey Shale, encompassing large portions of the southern and central portions of the state, both on and offshore, as the nation's largest oil shale "play."¹¹ The agency estimates that the Monterey harbors 15.4 billion barrels of "technically recoverable" oil, more than 60 percent of the nation's total estimated shale oil resources.¹² Although a true oil shale boom has not yet occurred, **fracking for shale in California is already on the rise, with at least 1,200 fracs performed in the state since January 2011**.¹³

The technological advancements driving today's "modern" fracking pose new and largely unstudied environmental and public health risks that are cumulative to the significant impacts arising from "traditional" oil and gas production.¹⁴ For example, today's fracking relies on "frac fluids" containing extensive amounts of chemicals, many undisclosed under trade secret and other business confidentiality laws.¹⁵ Compared to past practices, fracking is now conducted further below the surface (often more than two miles), down wells that pass through groundwater aquifers commonly relied upon for domestic and agricultural use.¹⁶ And fracking today relies on the use of much larger quantities of increasingly scarce freshwater supplies than past oil and gas operations.¹⁷

Conducting modern fracking techniques offshore adds yet another layer of complexity, uncertainty and risk. As one top federal regulator said during a recent spill, offshore drilling is "inherently risky" and blowouts "aren't that infrequent."¹⁹ In light of this inherent risk, offshore fracking is obviously of great concern. While limited information is available, most offshore California fracs to date appear to be what are known as a "frac pack," a modified version of a "gravel pack." Both methods are intended to create a sand filter that serves to control sand production in poorly bonded offshore formations.²⁰



FIGURE 6. ILLUSTRATION OF A HORIZONTAL WELL SHOWING THE WATER LIFECYCLE IN HYDRAULIC FRACTURING All across California and throughout the United States, communities have been facing an onslaught of new onshore fracking operations, however almost no one realized that secretly oil companies have been fracking in our fragile ocean for at least two decades. Image from EPA Hydraulic Fracturing Study Plan.

The past use of offshore "gravel packs" did not, however, involve fracturing the formation.²¹ While the "frac pack" technique differs in some respects from onshore fracking (for example, using larger quantities of sand and using seawater in place of fresh water), the core process is the same: the injection of water, sand, and chemicals at high pressures with the intent of exceeding the fracture pressure of the geologic formation,²² but doing so under the seabed.

This report, focusing on federal, "outer continental shelf" (OCS) waters, located beyond three nautical miles from the state's coast, explores the natural resources that are at risk from offshore fracking, the known frequency and extent of the practice off California's shores, recent lessons that may be drawn from the Deepwater Horizon disaster, and questions of compliance with several federal environmental laws. It ends with a series of recommendations for addressing the newly discovered practice of offshore fracking with a focus on the Santa Barbara Channel.

California on Acid

Despite the vast estimates of oil reserves harbored in the Monterey Shale, it remains unclear whether fracking can "unlock" those resources.²³ While shale formations in other areas of the country commonly trap oil in flat layers, seismic forces have folded the Monterey Shale formation.²⁴ Because of this geologic complexity, many oil industry insiders believe the formation may respond better to alternative stimulation techniques, such as "acidizing," that open small pores in the rock, than to hydraulic fracturing.²⁵

As the name implies, acidizing involves the use of hydrofluoric and hydrochloric acids, some of the most hazardous industrial chemicals in use, to stimulate well production.²⁶ Like fracking, rudimentary forms of acidizing have been used for decades, but are now being utilized in new and more intensive ways. According to the state Division of Oil, Gas & Geothermal Resources (DOGGR), the two primary forms of the process used in California are "fracture acidizing" and "matrix acidizing."²⁷ Fracture acidizing is "similar to [fracking] in that pressures are done at the fracture gradient of the hydrocarbon bearing formation to create the fractures," but "differs in that proppants are not used."28 Matrix acidizing is "similar to fracture acidizing except it is performed below fracture pressure and is used to dissolve channels to create wormholes near the wellbore."29

Available information, though limited, indicates that acidizing has been commonly utilized on offshore platforms within the Santa Barbara Channel.³⁰ The precise extent and frequency of fracking, acidizing, and other well stimulation methods in California has not been transparent to the public, as the practice has not been specifically regulated or tracked by federal or state regulators. Although California Governor Jerry Brown signed Senate Bill 4 on September 20, 2013, a lengthy and complex piece of legislation that, among many other provisions, establishes a permitting system for fracking and acidizing proposals ³¹, this legislative mandate applies to proposals onshore California and in offshore state waters, and not to federal waters that are the focus of this report.



WHAT'S AT STAKE

The large majority of California's federal offshore oil platforms are located within the Santa Barbara Channel, an arm of the Pacific Ocean separating Santa Barbara, Ventura, and other coastal communities from the northern Channel Islands. Even in a state as renowned for its natural resources as California, the Channel stands out for its exceptional beauty and extraordinary biological diversity. Cool, subarctic waters converge with warmer, equatorial waters in the Channel, fostering a richness of marine and other wildlife, including blue, fin, humpback, minke, and killer whales, porpoises, dolphins, pinnipeds (seals and sea lions), the southern sea otter, and hundreds of species of birds, fishes, and invertebrates.³²

Offshore Oil Rig Platforms Santa Barbara Channel



DIRTY WATER Fracking Offshore California

At the outer boundaries of the Santa Barbara Channel, the Channel Islands harbor incredible biological diversity, so much so that they have been dubbed "North America's Galapagos." Reflecting the environmental importance of the area, the Channel Islands National Park (encompassing Santa Barbara, Anacapa, Santa Cruz, Santa Rosa, and San Miguel Islands) was established in 1980.³³ In total, the Islands and their surrounding waters provide habitat for more than 2,000 species of plants and animals, including 150 endemic species uniquely adapted to their island ecosystems and found nowhere else in the world.³⁴

Also established in 1980, the Channel Islands National Marine Sanctuary (CINMS) encompasses 1,470 square miles of ocean habitat around the islands.³⁵ The CINMS is one of only 14 such marine sanctuaries nationwide, established under federal legislation for their conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or aesthetic qualities.³⁶ Notable species that take refuge in the Sanctuary include over 25 species of whales and dolphins, five species of seals and sea lions, more than 20 species of sharks, and over 60 species of birds.³⁷

More recently, in separate but related actions in 2002 and 2007, the State of California and the federal government established a network of



Santa Barbara Channel has been called North America's Galapagos due to richness of habitat and over 2,000 species of plants and animals. © Linda Krop.

marine reserves within the CINMS.³⁸ In 2012, California completed the United States' first statewide network of Marine Protected Areas (MPAs) along the California coast, designed to ensure healthy and vibrant populations of fish and other marine species.³⁹ Off the coast of Santa Barbara, these underwater preserves and parks can be found at Point Conception, Kashtayit (near Gaviota State Park), Naples Reef, Campus Point, the Goleta Slough, and several designated areas surrounding the Channel Islands.⁴⁰







Despite its beauty and environmental importance, the Santa Barbara Channel has long been the epicenter of California offshore oil development, both physically and symbolically. The nation's first offshore wells were drilled along this coast, and it was here that the nation's first large offshore oil disaster occurred. The 1969 Santa Barbara oil spill, which still looms large in the public's consciousness, is widely credited with catalyzing enactment of landmark state and federal environmental legislation. The spill, however, failed to substantially slow federal leasing and permitting decisions that opened up California's waters to extensive offshore oil development. Between 1967 and 1984, the U.S. Department of the Interior (DOI) sold 311 leases covering more than 1.6 million acres off the California coast.⁴¹ Today, 23 offshore platforms still operate in the Santa Barbara Channel, all but one of which is located in federal, rather than state waters.⁴²

The 1969 Santa Barbara Oil Spill

On the morning of January 28, 1969, while the Union Oil crew on Platform A was retrieving pipe from the bottom of a well drilled five miles offshore Summerland, California, something went terribly wrong: the well blew out.⁴³ As oil began seeping up from the bottom of the ocean floor, so began one of the largest environmental disasters in U.S. history.⁴⁴

Oil saturated the Santa Barbara Channel and washed ashore for eleven days before the well at Platform A was capped—yet even after the well was capped, oil continued to seep up steadily through fractures in the ocean floor for several years.⁴⁵ In the end, over three million gallons of oil were released, fouling 35 miles of coastline, killing as many as 15,000 seabirds, and poisoning dolphins, seals and sea lions.⁴⁶ Santa Barbara's tourist-dependent local economy, businesses and property owners, and the local fishing industry all suffered extensive economic loss in the wake of the spill.⁴⁷



The 1969 oil spill gave birth to the environmental movement and a slate of laws to help protect community and environmental health, and yet two generations later Californians have learned that oil companies are conducting risky offshore fracking operations without adequate regulatory oversight. © Robert Sollen.

Prior to the spill, industry had claimed that safeguards were in place to prevent such a blowout.⁴⁸ So what happened? The cause of the blowout has been primarily attributed to Union Oil's use of an improper casing.⁴⁹ Casing is used to reinforce a well and thereby prevent blowouts. On Platform A, federal regulators provided Union Oil with permission to use a shorter casing than normally required by federal standards.⁵⁰ Casing the well at a shallower depth left the well unprepared to handle the pressure of the ensuing blowout.⁵¹ In other words, the 1969 oil spill "might have been avoided but for a failure of federal oversight."⁵²

The 1969 Santa Barbara spill is widely recognized as a catalyst for the enactment of many of the nation's most bedrock and enduring environmental laws, including the National Environmental Policy Act (NEPA)⁵³, Clean Water Act (CWA)⁵⁴, and creation of the U.S. Environmental Protection Agency (US EPA).⁵⁵ At the state level, Californians overwhelmingly passed a citizens' initiative (Proposition 20) in 1972, which lead to the passage of the Coastal Act in 1976, one of the nation's strongest environmental laws.⁵⁶

FRACKING OFF CALIFORNIA'S SHORES PRELIMINARY INFORMATION BUT AN INCOMPLETE PICTURE

In March 2013, EDC submitted a FOIA request to the Bureau of Safety and Environmental Enforcement (BSEE), an agency within DOI, in order to investigate whether there had been any instances of fracking from offshore platforms located in federal waters off the California coast. BSEE is responsible for permitting offshore drilling operations and ensuring that such operations comply with required safety regulations, while its partner DOI agency, Bureau of Ocean Energy Management (BOEM), conducts OCS lease sales and is responsible for environmental analysis under the Outer Continental Shelf Lands Act (OCSLA)⁵⁷, NEPA, and other laws.⁵⁸

EDC's analysis of that FOIA response determined that at least 15 instances of fracking off California shores within federal waters have occurred over the last twenty years—with at least four frac jobs approved as recently as this year.⁵⁹

Importantly, however, it is almost certain that the FOIA response does not accurately reflect the true frequency and extent of offshore fracking, as officials at BSEE appear to have been unaware that fracking was occurring until very recently. Indeed, BSEE did not begin to familiarize itself with the issue until prompted by questions from concerned citizens and the need to respond to various FOIA requests.⁶⁰

Once it finally became aware of the practice, BSEE's estimates of the extent of fracking in the Santa Barbara Channel steadily grew over the course of several months, as reflected in the evolving agency drafts of a public "fact sheet," in which the agency revised its frac estimates from 2 to 4 to 11 to "very few" between January and April 2013.⁶¹ (See Table 1). The fact sheet similarly shows evolving knowledge in relation to the type of fracking method being utilized, with agency staff incorrectly stating that horizontal fracking had not been utilized offshore (in fact, Venoco fracked horizontally off Platform Gail in 2010).

January 11, 2013	2
February 11, 2013	4
February 25, 2013	11
April 2013	'very few'

TABLE 1: EVOLVING BSEE FRAC ESTIMATES

Nor does it appear likely that DOI will be able to determine the true extent of California offshore fracking anytime soon, as its files are apparently not easily searchable.⁶² As a BSEE spokesperson recently stated, "it cannot be sure just how often fracking has been allowed without going through every single well file."⁶³ In the Gulf of Mexico, BSEE estimates that 12 percent of offshore wells have been fracked.⁶⁴

"To get the full number of fracs performed offshore, BSEE officials would have to comb through every well file and count the number of fracking operations, which could take years because many files are not digitized."⁶⁵

The records that have been located thus far by BSEE primarily document fracking from Platforms Gilda and Gail, both located in the "Santa Clara Unit" off the Ventura County coast.





Venoco was issued 32 violations at Platform Gail for not following basic operating procedures between 2005 and 2010. © Erin Feinblatt

Installed in 1987, Platform Gail is the closest of all Santa Barbara Channel platforms to the Channel Islands National Marine Sanctuary, located just outside its boundaries. It is also located in close proximity to Anacapa Island within Channel Islands National Park, and the Marine Reserve Area extending off that Island's northern shores.

Platform Gail, currently operated by Venoco, Inc., has a history of spills.⁶⁶ These spills have been caused by a variety of factors, including losses in well control⁶⁷ and pipeline ruptures.⁶⁸ A recent investigation found that **"Venoco was issued 32 violations ... for not following basic operating procedures" in the years 2005–2010.⁶⁹ Unsettlingly, this was apparently "the smallest number of violations of any company working in the channel."⁷⁰**

Platform	Location	Operator	Date
Esther	Offshore Seal Beach	DCOR	Unknown (State Waters)
Eva	Offshore Huntington Beach	DCOR	Unknown (State Waters)
Gail	SB Channel	Venoco	1992, 2010
Gilda	SB Channel	DCOR/Nuevo/Torch	1994, 1997, 1998, 2001, 2002, 2003, 2013
Hidalgo	Point Arguello Field	Chevron (now PXP)	1997

TABLE 2: CURRENTLY KNOWN OFFSHORE FRACKS IN FEDERAL AND STATE WATERS

Platform Gilda was installed in 1981, and is currently operated by Dos Cuadras Offshore Resources, LLC (DCOR).⁷¹ In recent years, DCOR has become the largest California offshore operator, managing eleven of the 23 producing platforms off the state's shores, including Platforms A (site of '69 oil spill), B, C, Gina and Henry.⁷²

"Our position is that [offshore fracking is] safe and effective. It's just like they're out there in Kansas, except there's an ocean on top."⁷⁷ - International Association of Drilling Contractors

Over the course of three weeks between the months of March and April in 2013, DCOR reported at least one spill per week from Platform Gilda.⁷³ Nonetheless, in May 2013, DCOR removed existing safety infrastructure from Gilda, including a spill boom deployment boat, and will instead rely on Oil Spill Response Vessels operated by Clean Seas as its primary response mechanism in the event of a spill.⁷⁴ DCOR has also been responsible for notable spills at other offshore platforms, including a leak of more than 1,100 gallons of oil from Platform A into the ocean due to a hole in one of the oil pump lines.⁷⁵ The resulting sheen reached 1.5 miles in length.⁷⁶



From the information that EDC has been able to gain from our investigation, Platform Gilda appears to be the platform from which fracking most regularly happens, and yet in 2013 safety infrastructure was removed from the platform. © Erin Feinblatt



ACCIDENTS HAPPEN ESPECIALLY WHEN THE GOVERNMENT GIVES SHORTCUTS TO THE OIL INDUSTRY

Taking note of the spills and other accidents at Platforms Gail, Gilda and the other platforms operated by Venoco and DCOR, draws attention to the fact that accidents happen. No process is perfect—and because no process is perfect, industry and government need to be vigilant when it comes to regulating offshore drilling and production. Such vigilance is particularly important when the oil industry is utilizing new technologies or significantly modified forms of existing technologies.



BP's 2010 Deepwater Horizon blowout in the Gulf released an estimated 205 million gallons of oil. It was later discovered that before the disaster, BP had received exemptions from federal regulators. © Julie Dermansky.

Unfortunately, the federal government has instead time and again provided the oil industry with exemptions, shortcuts, and other loopholes for risky offshore drilling operations. For several decades, the most tragic consequence of this lack of vigilance was the 1969 Santa Barbara oil spill. That changed in April 2010, when a blowout at BP's Deepwater Horizon—an ultra-deepwater oil platform located in the Gulf of Mexico—killed eleven crewmembers and led to the "largest and most prolonged" offshore oil spill in our nation's history.⁷⁸ Over the course of three months, an estimated 205 million gallons of oil were released into the Gulf.⁷⁹

The massive spill had a devastating impact on marine life, including dolphins, whales, seabirds, and sea turtles.⁸⁰ Being "one of the most productive sea food industries in the world," the Gulf economy also took a major hit.⁸¹ Ongoing human health impacts continue, including extreme respiratory problems, eye and skin irritation, nausea, and central nervous system damage in local residents and response workers.⁸²

DIRTY WATER Fracking Offshore California

As was the case with the 1969 Santa Barbara oil spill, government regulators had eased the rules at the Deepwater Horizon platform. Prior to the disaster, BP's exploration plans and drilling permits had been approved under a "categorical exclusion" from the public participation and environmental analysis requirements of NEPA, even though deepwater drilling is a relatively new and inherently risky practice.⁸³ In addition, it was later determined that DOI lacked the resources to establish meaningful safety regulations.⁸⁴ These deficiencies led the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling ("National Commission"), which was created by President Obama to study the cause of the spill, to conclude that "absent significant reform in both industry practices and government policies," an accident such as Deepwater Horizon "might well recur."85

"Efforts to expand regulatory oversight, tighten safety requirements, and provide funding to equip regulators with the resources, personnel, and training needed to be effective were either overtly resisted or not supported by industry, members of Congress, and several administrations. As a result, neither the regulations nor the regulators were asking the tough questions or requiring the demonstration of preparedness that could have avoided the disaster."

-National Commission on Deepwater Horizon spill⁸⁷

SHORTCUTS WITH DISASTROUS CONSEQUENCES



© Robert Sollen

Federal regulators approve casing of Platform A to 239 instead of the standard 880 feet 86



2010 Deepwater Horizon Spill

Federal regulators approve drilling of BP's Macondo well in water 5,000 feet deep under a categorical exemption to the National Environmental Policy Act

1969 Santa Barbara Oil Spill



UNFINISHED NEPA REFORM IN THE WAKE OF DEEPWATER HORIZON

In the aftermath of the Deepwater Horizon disaster, the Council on Environmental Quality (CEQ) released a report on the NEPA procedures for environmental review by the Minerals Management Service (MMS), the DOI agency previously responsible for overseeing offshore oil development in federal waters.⁸⁸ CEQ is part of the Executive Office of the President and was established in the wake of the 1969 Santa Barbara oil spill as part of NEPA. CEQ's primary responsibliities include the coordination of federal environmental efforts across agencies and oversight over federal agency compliance with NEPA.

NEPA's two primary purposes are to ensure that public officials consider the environmental impacts of their decisions before they are made, and to ensure that the government decision-making process is transparent and open to public participation.⁸⁹ To that end, it requires that agencies prepare an environmental impact statement (EIS) or environmental assessment (EA) for proposed federal actions. In some circumstances, a proposal that falls within a category of actions previously determined not to have an individual or cumulatively significant effect on the environment can be exempted from analysis.⁹⁰ Such a "categorical exclusion" (CE), however, cannot apply if there are "extraordinary circumstances."⁹¹ Under DOI regulations, these circumstances include, but are not limited to: highly uncertain effects, or that involve unique or unknown risks; significant impacts on ecologically significant areas; significant impacts on listed species; and actions with highly controversial environmental effects.⁹²

In its review, CEQ found that MMS overwhelmingly issued CEs for oil and gas exploration plans and drilling proposals in the Gulf of Mexico—including risky deepwater operations—based on a concept known as "tiering."⁹³ Tiering involves reliance on a previous, "bigger picture" or programmatic EIS or EA in review of a subsequent, site-specific proposal, and is intended to increase the efficiency of NEPA compliance by minimizing redundant environmental analysis.⁹⁴

Although tiering is a valid concept that can help increase the efficiency of environmental review, CEQ concluded that MMS had used it in a manner that "was not transparent . . .and has led to confusion and concern about whether environmental impacts were sufficiently evaluated and disclosed."⁹⁵ Based on its findings, CEQ offered recommended reforms to improve NEPA analysis of offshore oil decisions:

- **Tiering and Site-Specific Analysis:** "perform careful and comprehensive NEPA review," including "site-specific information where appropriate" ⁹⁶
- **Transparency, Public Accountability, and Sound Decision-Making:** "ensure that NEPA analyses fully inform and align with substantive decisions . . . and that those analyses will be fully available to the public;" and "ensure . . . robust analysis of reasonably foreseeable impacts, including . . .low probability catastrophic spills" ⁹⁷
- **Categorical Exclusions:** "review the use of categorical exclusions for Outer Continental Shelf oil and gas exploration and development in light of the increasing levels of complexity and risk" ⁹⁸
- **Changed Circumstances:** "consider supplementing existing NEPA practices, procedures, and analyses to reflect changed assumptions . . . specifically, conclusions may change about the likelihood, magnitude, and environmental impacts of a major spill in connection with OCS oil and gas drilling activities" ⁹⁹

On the same day that CEQ issued its report, BOEM's Director Michael Bromwich released a memorandum announcing that the agency would undertake a comprehensive review and evaluation of the agency's use of CEs, followed by a public notice of its intent to conduct a "broad review" of its use of categorical exclusions.^{100/101} In the interim, BOEM was to "narrow its use of categorical exclusions," and Director Bromwich specifically identified the "proposed use of new or unusual technology" as a factor that would trigger more detailed environmental analysis.¹⁰²

DIRTY WATER Fracking Offshore California

The recommendations and pledges made in the CEQ report and by Director Bromwich were laudable. In response, the Obama administration claimed to have "launched the most aggressive and comprehensive reforms to offshore oil and gas regulation and oversight in U.S. history."¹⁰⁴ Unfortunately, three years later, there has been no further action.¹⁰⁵ DOI is yet to publish even a draft set of recommendations arising from the review initiated by Director Bromwich.¹⁰⁶ At least with respect to pledges of NEPA reforms and associated CEQ recommendations, those promises and recommendations remain unfulfilled.

"We are building a more robust and aggressive independent oversight agency based on the development of new tools and enhanced legal and regulatory authorities, as well as on the more aggressive use of existing tools. These changes in our regulatory framework and approach will serve to hold offshore operators accountable and ensure that the industry and the country are fully prepared to deal with catastrophic blowouts and oil spills like the Deepwater Horizon."¹⁰³

-Former BOEM Director Michael Bromwich



In response to Deepwater Horizon, President Obama "launched the most aggressive and comprehensive reforms to offshore oil and gas regulation and oversight in the U.S. history." Three years later, however, there has been no further action. © Laurie Bailey



FEDERAL OVERSIGHT OF OFFSHORE FRACKING IN CONFLICT WITH ENVIRONMENTAL LAWS?

In the Santa Barbara Channel, DOI's oversight and regulation of fracking and other well stimulation techniques - or lack thereof - falls short of its pledged NEPA reform efforts, and also raises significant legal concerns under other cornerstone federal environmental laws including the CWA and Coastal Zone Management Act.¹⁰⁷

These shortcomings are compounded by the numerous loopholes and exemptions provided to the oil and gas industry under federal law. The most notorious of these exemptions, the so-called "Halliburton amendment" included in the 2005 Energy Policy Act (2005 Act), specifically exempted fracking from the protections otherwise provided in the Safe Drinking Water Act.¹⁰⁸ The Halliburton amendment, and additional oil and gas loopholes from NEPA and the CWA included in the 2005 Act, arose from recommendations made by Vice President Cheney's industry-dominated "Energy Task Force." The 2005 provisions only further tear at a badly frayed safety net of federal environmental and public health laws governing well stimulation, and oil and gas production generally.¹⁰⁹

NATIONAL ENVIRONMENTAL POLICY ACT

As detailed above, BSEE staff was unaware of offshore fracking prior to public inquiries regarding the practice. Consequently, the agency was also unsure whether the fracking operations had undergone environmental review under NEPA. As one staffer asked, "has fracking ever been considered in a five-year plan and been assessed in any NEPA document for the area in question?" Another suggested that fracking offshore "would be better left to a separate NEPA assessment" and that it "might even be better to deal with [offshore fracking] in a future programmatic document that covers the entire region."¹¹⁰

"Has there been an EIS to assess the environmental consequences of fracking on the OCS? How can we begin to review permit requests without that?"

- BSEE staffer

The suggestion is a valid one. In California's first major fracking litigation under NEPA, a federal court recently held that the Bureau of Land Management (BLM), an agency within DOI, violated the law in relation to lease sales on public lands in central California.¹¹¹ The court concluded that BLM failed to "adequately consider the development impact of [fracking] when used in combination with technologies such as horizontal drilling," and that BLM's "finding of no significant impact" was "erroneous as a matter of law." In response, the agency has initiated a comprehensive EIS analysis to study potential impacts of fracking **prior** to leasing.¹¹²



As unstudied as the risks of onshore fracking are, offshore fracking is even less well understood. Despite its staffs' own internal questions, the lack of any prior NEPA analysis directly addressing the practice, and only months after first becoming aware that fracking was even being utilized in the Santa Barbara Channel, in June 2013 BSEE approved four new fracs from Platform Gilda under a CE.¹¹³ The CEs were "tiered" to an OCS Plan of Development approved more than thirty years ago in 1980.¹¹⁴

A recent California public lands court case determined that prior to fracking more significant environmental review is required. This case dealt with onshore fracking; the risks of offshore fracking are even less well understood. © Erin Feinblatt

CLEAN WATER ACT

Congress enacted the Clean Water Act (CWA) to "restore and maintain the chemical, physical, and biological integrity of the nation's waters."¹¹⁶ The CWA prohibits the discharge of any pollutant into U.S. waters without a National Pollution Discharge Elimination System (NPDES) permit.¹¹⁷ At a minimum, NPDES permits must include technology-based effluent limitations, any more stringent limitations necessary to meet water quality standards, and monitoring and reporting requirements.¹¹⁸



Approximately half the platforms in the Santa Barbara Channel discharge their polluted wastewater directly into the ocean. © Erin Feinblatt

In a typical onshore oil production operation in southern California, oil wastewater byproducts, including "produced water" and "frac flowback", are commonly injected back into underground reservoirs, and thus are subject to federal requirements other than the CWA. In contrast, approximately half the offshore platforms in the Santa Barbara Channel discharge all or a portion of their wastewater directly to the ocean (including Platforms Gail, Gilda, and Hidalgo).¹¹⁹

Since 1984, discharges from the Santa Barbara Channel offshore platforms have been regulated under a "general" NPDES permit which limits the volume of various discharges, including drilling fluids, drill cuttings, and produced water.¹²⁰ "Produced water" is the most common waste byproduct in aging southern California oil fields that typically yield far more of it, often called "brine," than oil. The permit also places limits on the concentration of various pollutants that may be present in said discharges, and establishes monitoring and reporting requirements. In spring 2013, the EPA issued its more recent revision of the permit.¹²²



The revised permit, however, failed to address fracking fluids and the host of chemicals found within, reflecting the fact that officials at both DOI and EPA were largely unaware that offshore fracking was being conducted. Although DOI has not promulgated rules requiring chemical disclosure from OCS wells, one recent report identified 2,500 "hydraulic fracturing products" in frac fluids,¹²³ 650 of which contained chemicals that are known human carcinogens, hazardous air pollutants, or have been otherwise identified as risks to human health.¹²⁴



© Branden Aroyan

Despite the permit's lack of specificity, the lack of chemical disclosure, the numerous harmful chemicals that are known to occur in frac fluids, and the fact that agency staff were largely unaware that fracking was even occurring during the permit renewal process, EPA staff recently reached the questionable conclusion that fracking fluids are considered a "well completion fluid," regulated under the general NPDES permit effluent limitations, and thus may be discharged along with produced water under the newly-revised permit.¹²⁵

Cooking the Climate

In addition to questions of compliance with federal laws, the prospect of widespread fracking in California raises serious concerns in relation to an issue not yet comprehensively addressed by federal law: climate change. While some have argued that natural gas fracking can help address greenhouse gas emission reduction by acting as a "bridge fuel" from coal dependence to renewable energy (though the high methane emissions at many gas production sites can negate much of these reductions), California fracking largely targets carbon-intensive oil - a bridge to nowhere. According to the California Air Resources Board, the extraction and transportation of oil from some state oil fields equals the carbon intensity of Canadian tar sands.¹²⁶ Fracking California for oil is not only bad news for an already warming world, it would likely undermine the state's ability to meet its low carbon fuel standard.

COASTAL ZONE MANAGEMENT ACT

Congress passed the 1972 Coastal Zone Management Act (CZMA) in order to better define the respective jurisdiction of coastal states and the federal government in relation to coastal waters.¹²⁷ While the CZMA retained the existing three-mile federal boundary established by previous federal legislation, it also provided coastal states with oversight over activities in federal waters where those states have adopted a Coastal Management Program (CMP) to manage coastal land and water uses.¹²⁸ The CMP's purpose "is to encourage coastal states to manage their coastal resources in accordance with specific national priorities," including "protection of natural resources, water quality, shoreline stability, and public access."¹²⁹ In coastal states with federally approved CMPs, private entities that seek federal approvals such as permits or licenses must submit a "consistency certification" to the state showing that the activity is consistent with the CMP.¹³⁰



Santa Barbara's 1969 spill from Platform A released over three million gallons of oil, fouling 35 miles of coastline, killing as many as 15 thousand seabirds and poisoning dolphins, seals, and sea lions. © Robert Sollen

"As President Nixon aptly observed, the Santa Barbara spill changed the nation's attitudes towards the environment. Some would trace the current framework of environmental protections in substantial measure directly to the Santa Barbara spill... Of particular relevance here, the federal Coastal Zone Management Act and California's Coastal Act followed in the wake of the spill and both provided California substantial oversight authority for offshore oil drilling in federally controlled areas." California v. Norton, 311 F.3d 1162, 1167 (9th Cir. 2002)



California's CMP, which goes well beyond the minimum protections mandated by the CZMA, is overseen by the California Coastal Commission, an agency generally regarded as rigorously protective of the state's unparalleled and irreplaceable coastal resources.¹³¹ The Coastal Commission, as well as local California cities and counties, has a long history of conflict and disagreement with DOI concerning the federal government's offshore oil program.¹³²

"We need to launch an investigation of offshore fracking done here in California. We do not yet understand the extent of fracking in federal and state waters, nor fully understand its risks."

--Alison Dettmer, Deputy Director, California Coastal Commission

Under the CZMA consistency requirements, oil and gas companies seeking to conduct OCS exploration, development, or production must certify to DOI that the activity is consistent with the CMP.¹³³ Despite these requirements, California Coastal Commission staff in August 2013 stated that the agency "had no idea until recently that ocean fracking was even happening."¹³⁴



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Although there are currently 23 platforms in offshore federal waters, the Commission has approved consistency determinations on the OCS plans for only 13 of these platforms—the rest predate establishment of the consistency review process by the state.¹³⁵ Compounding this gap in review, BSEE has been approving applications for permits to drill (APDs) and applications for permits to modify (APMs) as "minor revisions" to OCS plans. These plans have circumvented consistency review, as California's CMP only requires consistency reviews for "major revisions."¹³⁶

However, given that BSEE itself was unaware of offshore fracking until recently, even if it had been conducting consistency certifications, those certifications would still not have included disclosure of fracking and analysis of its potential impacts. The Coastal Commission staff has launched its own investigation into the extent of offshore fracking, as well as the Commission's options under the CZMA consistency process and other authorities to address the practice.

"The coast is never saved. It's always being saved." —Peter Douglas, Founder of the California Coastal Commission and longtime Executive Director (1942-2012)¹³⁷

ENDANGERED SPECIES ACT AND MARINE MAMMAL PROTECTION ACT

Congress enacted the Endangered Species Act (ESA) to provide a means whereby endangered species and the ecosystems they depend upon may be protected.¹³⁸ The primary purpose of the ESA is not merely to prevent the extinction of listed species, however, but to recover them to the point where the protections of the Act are no longer necessary. To that end, the ESA's section 7 consultation provision requires that federal agencies ensure that actions they take or authorize do not jeopardize the continued existence of listed species, and requires them to consult with the Fish and Wildlife Service and/or National Marine Fisheries Service if protected species may be in the area and adversely affected by the proposed activity.¹³⁹



Threatened and endangered species of the Santa Barbara Channel include the blue whale, fin whale, humpback whale, southern sea otter, black abalone, and white abalone.

In addition, the Marine Mammal Protection Act (MMPA) provides overlapping but distinct protections to the marine mammals of the Santa Barbara Channel.¹⁴⁰ The MMPA provides additional constraints on federal agency actions, including a moratorium on "take" of marine mammals, defined as actions that cause disruption of migration, breathing, nursing, breeding, feeding, sheltering, or other essential behavioral patterns.¹⁴¹ Actions that could incidentally take "small numbers" of marine mammals can be exempted so long as the activities are geographically limited and have a negligible impact, but such exemptions are only granted after a transparent public process.¹⁴²

Unfortunately, there is no indication that DOI has potential considered the impacts of fracking on imperiled species of wildlife and other marine mammals the Santa Barbara in Channel. Even after learning that fracking is occurring, it appears that the agency will continue to approve future with proposals minimal environmental analvsis. and without the benefit of complying with the mandates of the ESA and MMPA.



There is no indication that federal agencies are considering the impacts of fracking and polluted discharge on threatened and endangered species that live in the Santa Barbara Channel. ©Linda Krop.



RECOMMENDATIONS

If history is any guide, the federal government's lax oversight of fracking and other well stimulation practices within the Santa Barbara Channel is cause for significant concern. Although the blame for the 1969 Santa Barbara oil spill and the Deepwater Horizon disaster ultimately lies with the oil industry, the likelihood of these disasters occurring could have been greatly reduced with robust federal oversight and aggressive implementation of laws and policies intended to protect the marine environment.



The President's commission examining Deepwater Horizon concluded that without significant reform this type of disaster "might well recur." Unfortunately, there has been little movement in Washington. © Julie Dermansky

The National Commission concluded that "absent significant reform in both industry practices and government policies," an accident such as Deepwater Horizon "might well recur."¹⁴³ More than three years later, it is clear that such significant reform has not been achieved, particularly in the NEPA context, and appears to have been largely forgotten by the Obama administration. EDC has prepared this report in an effort to sound the alarm before yet another avoidable disaster occurs off our irreplaceable coastline. As this report focuses on offshore fracking within federal waters, our recommendations are accordingly focused on federal law and policy.

1. Moratorium on Fracking Until Further Environmental Review

DOI was largely unaware that fracking was occurring off California's shores until this year, and the agency is yet to consider and analyze the environmental risks of offshore fracking in a public and transparent manner. Accordingly, DOI should place a moratorium on fracking and other well-stimulation methods until it is able to assess the full extent of past, present, and potential future fracking off California's shores, and to thoroughly study the potential impacts of the technique on our coastal resources, water quality, extraordinary diversity of wildlife species, protected waters and lands, and critical economic drivers such as fishing and tourism. Further offshore fracking should only be conducted if it can be proven safe.



© Linda Krop

DOI may find some direction for its assessment under the independent study of fracking, acidization, and other well stimulation required by SB 4 for the State of California.¹⁴⁴ In this study, which must be completed by January 1, 2015, the California Secretary of Natural Resources must evaluate the hazards and risks well stimulation poses to "natural resources and public, occupational, and environmental health and safety," through a consideration of "at a minimum, atmospheric emissions, including potential greenhouse gas emissions, the potential degradation of air quality, potential impacts on wildlife . . . and habitat . . . induced seismicity, and the ultimate disposition, transport, transformation, and toxicology of well stimulation treatments."¹⁴⁵ As the study is targeted towards onshore fracking, DOI should develop a similarly comprehensive list of considerations tailored to the offshore marine environment.

2. Prohibit the Use of Categorical Exclusions For Offshore Fracking

DOI should establish enforceable policy prohibiting the use of categorical exclusions to authorize offshore fracking, acidization, and other well stimulation techniques in offshore waters. The use of CEs for offshore fracking is at odds with reforms proposed in response to Deepwater Horizon, precludes any environmental review or disclosure, and eliminates public transparency and participation. DOI must acknowledge that the use of fracking and other offshore well stimulation methods in the Santa Barbara Channel triggers several of the regulatory "extraordinary circumstances" exceptions to CEs, thus legally requiring the preparation of an EA or EIS.



3. Evaluating Offshore Fracking in a Programmatic EIS

If offshore well stimulation is proven safe, future offshore fracking should be evaluated through a Programmatic EIS (PEIS), similar to that currently being prepared by the California BLM. A PEIS is appropriate for assessing potential well stimulation in the Santa Barbara Channel, and would provide an opportunity for public participation and consultation with other state and federal agencies. Subsequent to a PEIS, DOI should still ensure that appropriate site-specific NEPA review is conducted for all exploration plans, APMs, and APDs.

4. Conduct Consistency Review for All Offshore Fracking Proposals

DOI should not wait for the California Coastal Commission staff to finish its own review of fracking to initiate overdue consistency processes under the CZMA. Instead, DOI should require operators to submit their fracking proposals (existing and proposed) to the Coastal Commission for consistency review.

5. Comply with the Endangered Species Act and Marine Mammal Protection Act

The Santa Barbara Channel contains extremely valuable habitat for numerous species listed as threatened or endangered, including blue, humpback, and fin whales, southern sea otters, and white and black abalone. Many of these imperiled animals receive overlapping but separate protections pursuant to the Marine Mammal Protection Act. DOI should ensure rigorous compliance with the Endangered Species Act, including section 7 consultation requirements, as well as requirements under the Marine Mammal Protection Act, prior to approval of any proposals involving fracking or other forms of well stimulation.



The Marine Mammal Protection Act-as well as the Endangered Species Act- require protection of great whales and other creatures that share our Channel. Currently federal oversight is failing that standard. © Erin Feinblatt

6. Review and Revise Clean Water Act Permit

Though recently revised, the current Clean Water Act permit regulating wastewater discharges from offshore California platforms does not specifically addresses frac waste streams such as flowback, and regulators were largely unaware that offshore fracking was even occurring during the revision process. If the general NPDES permit is found to be inadequate for addressing the unique impacts posed by fracking chemicals, the EPA should consider adopting individual permits for those platforms where fracking is being performed, in order to directly address chemicals that are outside the scope of what is authorized by the current permit, and either establish effluent limits for these chemicals or deny discharge altogether.

- Learn more at http://www.edcnet.org/learn/current_cases/offshore_oil/federal_oil_lease_litigation/index.html; see California v. Norton, 311 F.3d 1162, 1165–66 (9th Cir. 2002).
- 2. California v. Norton, 311 F.3d at 1165-66.
- 3. See ENVIRONMENTAL DEFENSE CENTER, 35th ANNIVERSARY CASE DOCKET 11, 31 (2012), http://www.edcnet.org/ pdf/35thAnvCaseDocket.pdf.
- 4. 5 U.S.C. § 551 et seq.
- 5. Jason Dearen and Alicia Chang, Oil Companies Frack in Coastal Waters off California, ASSOCIATED PRESS (Aug. 3, 2013); Mike Ludwig, Special Investigation: Fracking in the Ocean Off the California Coast, TRUTHOUT.ORG (July 25, 2013).
- 6. Halliburton. Hydraulic Fracturing 101 (available at http://www.halliburton.com/public/projects/pubsdata/Hydraulic_Fracturing/ fracturing_101.html).
- U.S. Energy Information Administration. Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays (July 2011) (available at: http://www.eia.gov/analysis/studies/usshalegas/pdf/usshaleplays.pdf); Daniel Yergen, Stepping on the Gas, NEW YORK TIMES (April 2, 2011).
- 8. Yergen, Stepping on the Gas, supra.
- U.S. Energy Information Administration, Frequently Asked Questions: How Much Shale Gas is Produced in the United States (available at: http://www.eia.gov/tools/faqs/faq.cfm?id=907&t=8).
- 10. Hydraulic Fracturing 101, supra.
- 11. U.S. Energy Information Administration. Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays, supra.
- 12. **Id.**
- 13. Between January 30, 2011 and September 9, 2013, 1,249 frac jobs within the state of California were reported on fracfocus (http:// fracfocus.org/), a voluntary disclosure site development by the oil industry and state groundwater management agencies. Due to its voluntary nature, and the fact that many oil companies have not agreed to participate in reporting on the site, this number likely significantly underestimates the true extent of fracking in California. As an example of its gaps, no frac jobs have been reported in Santa Barbara County to the fracfocus site, despite known instances.
- 14. New York State's "Generic Statewide Environmental Impact Statement: Well Permit Issuance for Horizontal Drilling and High-Volume Hydraulic Fracturing in the Marcellus Shale and Other Low-Permeability Gas Reservoirs" (revised in September 2011) provides an informative overview and analysis of the range and scale of environmental, public health, and socio-economic impacts and risks caused by fracking (available at: http://www.dec.ny.gov/energy/75370.html); see also U.S. Government Accountability Office. Information on Shale Resources, Development, and Environmental and Public Health Risks, GAO REPORT 12-732 (Sept. 5, 2012).
- Hannah Wiseman. Trade Secrets, Disclosure, and Dissent in a Fracturing Energy Revolution, 111 COLUMBIA L. REV. SIDEBAR 1 (2011).
- 16. U.S. Government Accountability Office. Unconventional Oil and Gas Development: Key Environmental and Public Health Requirements, GAO REPORT 12-874 (Sept. 5, 2012).
- 17. U.S. EPA, Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Sources (Feb. 2011).
- 18. GAO REPORT 12-874, supra.
- 19. Matt Smith and Michael Pearson. Gas Cut Off at Burning Gulf Rig, Official Say. CNN (July 25, 2013).
- 20. American Petroleum Institute. Briefing Paper: Offshore Hydraulic Fracturing (2013).
- 21. **Id.**
- 22. Id.
- 23. David R. Baker, Acidizing Could Rival Fracking in Monterey Shale, SAN FRANCISCO CHRONICLE (Aug. 25, 2013).
- 24. **Id.**
- 25. **Id.**
- 26. Robert Collier. Distracted by Fracking. NEXT GENERATION (August 8, 2013); Robert Collier. The Most Dangerous Chemical You've Never Heard of. NEXT GENERATION (August 15, 2013).
- 27. Mark Nechodem, Director, California Department of Conservation. Letter and response to May 30, 2013 request from Senator Pavley and Member Chesbro on well stimulation techniques (July 22, 2013).
- 28. Id.
- 29. Id.
- 30. BSEE specifically requested that EDC narrow the scope of its FOIA request to exclude the practice of acid treatments due to its common usage. In order to receive documents regarding fracking as quickly as possible, EDC narrowed the scope of its request, and is now researching offshore acidizing in greater detail. See March 22, 2013 email from EDC to BSEE narrowing scope of FOIA request (on file with author).
- 31. Senate Bill 4, enacted on September 20, 2013, codified at CAL. PUB. RES. CODE §§ 3158 (defining "acid well stimulation treatment"); 3160(a) (requiring Secretary of Natural Resources to conduct scientific study on well stimulation practices including acidizing and its "risks and potential hazards," including risks that it "pose[s] to natural resources and public, occupational, and environmental



health and safety"); 3160(b)(1)(C) (requiring establishment of threshold values for acidizing risks); 3160(d) (requiring permit for well stimulation treatment, including acidizing).

- 32. ECOLOGY OF THE SOUTHERN CALIFORNIA BIGHT: A SYNTHESIS AND INTERPRETATION. University of California Press, edited by Murray D. Dailey, Donald J. Reish, and Jack W. Anderson (1993).
- 33. Channel Islands National Park, http://www.nps.gov/chis/index.htm.
- 34. Id.
- 35. Channel Islands National Marine Sanctuary, About the Sanctuary, http://channelislands.noaa.gov/focus/about.html.
- Channel Islands National Marine Sanctuary, Sanctuary Information, http://channelislands.noaa.gov/drop_down/mission.html.
 Id.
- Establishment of Marine Reserves and a Marine Conservation Area within the Channel Islands National Marine Sanctuary, 72 Fed. Reg. 29,208 (May 24, 2007).
- 39. See www.californiampas.org/.
- 40. Id.
- 41. Robert Sollen, AN OCEAN OF OIL: A CENTURY OF POLITICAL STRUGGLE OVER PETROLEUM OFF THE CALIFORNIA COAST 49 (1998).
- 42. A second cluster of offshore platforms is located further south, in both state (Esther, Eva, and Emmy) and federal (Edith, Elly, Ellen, and Eureka) waters. These platforms are outside of EDC's tri-county service area (San Luis Obispo, Ventura, and Santa Barbara Counties) and thus are not addressed in detail in this report. Although the FOIA response did not contain any evidence of fracking from the federal platforms, it did contain records of fracking from Platforms Esther and Eva, located in state waters off the Orange County cities of Seal Beach and Huntington Beach, respectively.
- 43. See ROBERT EASTON, BLACK TIDE: THE SANTA BARBARA OIL SPILL AND ITS CONSEQUENCES 7–8 (1972); California v. Norton, 311 F.3d 1162, 1165–66 (9th Cir. 2002).
- 44. See id. at 8.
- 45. See id. at 251–52; SOLLEN, supra, at 49 (1998).
- 46. EASTON, supra note 40, at 257; KEITH C. CLARKE & JEFFREY J. HEMPHILL, THE SANTA BARBARA OIL SPILL; A RETROSPECTIVE (Association of Pacific Coast Geographers 64th Annual Meeting, Sept. 14, 2001).
- 47. See GRAHAM, supra, at 27; EASTON, supra, at 266.
- 48. GRAHAM, supra at 20.
- 49. California v. Norton, 311 F.3d 1162, 1166 (9th Cir. 2002).
- 50. EASTON, at 203–04.
- 51. See EASTON, supra, at 8-9, 203-04.
- 52. Norton, 311 F.3d at 1166.
- 53. 42 U.S.C. § 4321 et seq.
- 54. 33 U.S.C. 1251 et seq.
- 55. See CLARKE & HEMPHILL, supra.
- 56. See SOLLEN, supra, at 83-84.
- 57. 43 U.S.C. § 1331 et seq.
- 58. Bureau of Safety and Environmental Enforcement, About BSEE, http://www.bsee.gov/About-BSEE/index.aspx.
- 59. EDC reviewed all records in the FOIA request, compiling fracking frequency, location, and other data within spreadsheets. The information provided reflects the results based on that review and analysis.
- 60. See, e.g. December 17, 2012 BSEE emails (documenting agency staff beginning to ask questions about offshore fracking in response to public inquires).
- 61. **Id.**
- 62. Ludwig, Fracking in the Ocean off the California Coast, supra.
- 63. Dearen and Chang, Oil Companies Frack in Coastal Waters off California, supra.
- 64. Allison Sider. Scale of West Coast Fracking Probed, WALL STREET JOURNAL (September 9, 2013).
- 65. Ludwig, Fracking in the Ocean off the California Coast, supra.
- 66. Bureau of Ocean Energy Management, Pacific Platform Operators, http://www.boem.gov/BOEM-Newsroom/Offshore-Stats-and-Facts/Pacific-Region/Pacific-Platform-Operators.aspx.
- 67. See U.S. Department of the Interior, Minerals Management Service, Pacific OCS Region, INVESTIGATION OF LOSS OF WELL CONTROL AND OIL SPILL, PLATFORM GAIL 5 (2005).
- ^{68.} Zeke Barlow, 63 Gallons of Oil Spilled off Platform Gail, VENTURA COUNTY STAR (Oct. 22, 2010).
- 69. **Id.**
- 70. Id.
- 71. Bureau of Ocean Energy Management Pacific Platform Operators, supra.

- 72. DCOR, Home, http://www.dcorusa.com/.
- 73. Hazardous Materials Discharge Summary Reports, available at: http://bosagenda.countyofventura.org/sire/.
- 74. California Coastal Commission: Energy, Ocean Resources, and Federal Consistency Division Report (May 9, 2013).
- 75. Coast Guard News, Oil Spill Regulators Respond to Platform Spill off the Coast of Santa Barbara County (Dec. 8, 2008).
- 76. Id.
- 77. Sider. Scale of West Coast Fracking Probed, supra.
- 78. National Oceanic and Atmospheric Administration, NATURAL RESOURCE DAMAGE ASSESSMENT: APRIL 2012 STATUS UPDATE FOR THE DEEPWATER HORIZON OIL SPILL 7 (2012).
- 79. Maureen Hoch, New Estimate Puts Gulf Oil Leak at 205 Million Gallons, PBS NEWSHOUR (Aug. 2, 2010); NATIONAL COMMISSION ON THE BP DEEPWATER HORIZON OIL SPILL AND OFFSHORE DRILLING, DEEP WATER: THE GULF OIL DISASTER AND THE FUTURE OF OFFSHORE DRILLING 87 (2011).
- 80. See National Oceanic and Atmospheric Administration, supra, at 20–21; National Wildlife Federation, RESTORING A DEGRADED GULF OF MEXICO: WILDLIFE AND WETLANDS THREE YEARS INTO THE GULF OIL DISASTER 1 (2013); U.S. Fish and Wildlife Service, DEEPWATER HORIZON RESPONSE CONSOLIDATED FISH AND WILDLIFE COLLECTION REPORT (April 20, 2011), available at http://www.fws.gov/home/dhoilspill/pdfs/ConsolidatedWildlifeTable042011.pdf.
- 81. See NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, at 45.
- 82. NATIONAL COMMISSION ON THE BP DEEPWATER HORIZON OIL SPILL AND OFFSHORE DRILLING, supra, at 115, 122.
- 83. Id. at 82–83.
- 84. Id. at 73.
- 85. Id. at 122.
- 86. SOLLEN, supra, at 45.
- 87. NATIONAL COMMISSION ON THE BP DEEPWATER HORIZON SPILL AND OFFSHORE, supra at 126.
- 88. White House Council on Environmental Quality, REPORT REGARDING THE MINERALS MANAGEMENT SERVICE'S NATIONAL ENVIRONMENTAL POLICY ACT POLICIES, PRACTICES, AND PROCEDURES AS THEY RELATE TO OUTER CONTINENTAL SHELF OIL AND GAS EXPLORATION AND DEVELOPMENT 3 (2010).
- 89. 40 C.F.R. §§ 1500.1(b) and (c).
- 90. 40 C.F.R. §§ 1500-1508.
- 91. **Id.**
- 92. 43 C.F.R. § 46.215.
- 93. CEQ Report, supra.
- 94. **Id.**
- 95. Id. at 3.
- 96. Id. at 4-5.
- 97. Id. at 5.
- 98. Id. at 30.
- 99. Id. at 32.
- 100. See Press Release, Melissa Schwartz, BOEM, Categorical Exclusion for Gulf Activity to Be Limited While Interior Reviews NEPA Process and Develops Revised Policy (August 16, 2010).
- Notice of Intent to Conduct a Review of Categorical Exclusions for Outer Continental Shelf Decisions, 75 Fed. Reg. 62,418 (October 8, 2010).
- 102. See id; Schwartz, supra.
- 103. Schwartz, supra.
- 104. Bureau of Ocean Energy Management, Regulatory Reform, http://www.boem.gov/About-BOEM/Reforms/Reforms.aspx. Part of this "reform" was the renaming and division of the former MMS into two primary agencies, BSEE and BOEM.
- 105. DOI has made progress in other areas of reform, including recently promulgated regulations addressing blowout preventers at offshore platforms.
- ^{106.} See e-mail from John Romero, Pub. Affairs Officer, U.S. Dep't of the Interior, Bureau of Ocean Energy Mgmt., Office of Pub. Affairs, Pacific OCS Region, to Elise O'Dea, Law Clerk, Envtl. Def. Ctr. (July 24, 2010) (on file with author).
- 107. 16 U.S.C. § 1451 et seq.
- 108. Mary Tiemann and Adam Vann. Hydraulic Fracturing and Safe Drinking Water Act Issues. CONGRESSIONAL RESEARCH SERVICE (April 15, 2011).
- 109. William J. Brady and James P. Crandell. Hydraulic Fracturing Regulation in the United States: The Laissez-Faire Approach of the Federal Government and Varying State Regulations. 14 VT. J. ENVTL. L. 39 (Fall 2012).
- 110. February 1, 2013 BSEE staff email (received through FOIA).
- 111. Center for Biological Diversity v. Bureau of Land Mgmt., 2013 WL 1405938 (N.D. Cal. Mar. 31, 2013).



- 112. Notice of Intent to Prepare an Environmental Impact Statement for Oil and Gas Leasing and Development on Public Lands and Federal Mineral Estate and Potentially Amend the Hollister Resource Management Plan, 78 Fed. Reg. 47,408 (Aug. 5, 2013).
- 113. BSEE. Categorical Exclusion Review (CER) DCOR, LLC's Application for Permit to Drill, Wells S-05, S-033RD, S-071 and S-075., Platform Gilda, Santa Clara Unit, Pacific OCS Region (June 10, 2013).
- 114. **Id.**
- 115. **Id.**
- 116. 33 U.S.C. § 1251(a)(2).
- 117. 33 U.S.C. § 1311(a).
- 118. 33 U.S.C. §§ 1342, 1311, 1318.
- 119. California Coastal Commission Staff Report: CONSISTENCY DETERMINATION FOR U.S. EPA ISSUANCE OF CLEAN WATER ACT GENERAL NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM PERMIT CAG280000 FOR DISCHARGES FROM OFFSHORE OIL AND GAS PLATFORMS LOCATED IN FEDERAL WATERS OFF THE COAST OF SOUTHERN CALIFORNIA, at p. 2, 6 (June 12, 2013), (Available at http://documents.coastal.ca.gov/reports/2013/6/W13a-6-2013.pdf).
- 120. Id. at p. 2, 6.
- 121. **Id.**
- 122. Id. at 1.
- 123. U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON ENERGY AND COMMERCE MINORITY STAFF, CHEMICALS USED IN HYDRAULIC FRACTURING 1 (2011).
- 124. Id. at Exhibit 2, at 19–20.
- 125. February 22-23, 2013 emails between BSEE and EPA staff (received through FOIA). When BSEE initially asked the EPA whether fracking fluids are covered under the general permit for well treatment fluids, the EPA claimed that fracking fluids may require additional provisions outside of those offered by the permit, which includes effluent limitations developed in 1993, long before the rise of shale fracking. Staff later reversed his opinion after consulting with EPA HQ.
- 126. David R. Baker, In-state Oil Fields Don't All Meet Standard, SAN FRANCISCO CHRONICLE (February 10, 2013); David Roberts, 10 Reasons Why Fracking for Dirty Oil in California is a Stupid Idea, GRIST.ORG (March 18, 2103).
- 127. Harold F. Upton. Coastal Zone Management: Background and Reauthorization Issues. CONGRESSIONAL RESEARCH SERVICE (Sept. 29, 2010).
- 128. **Id.**
- 129. Linda Krop, How States Can Affect Federal Deepwater Port LNG Licensing Decisions: A Case Study Involving the Deepwater Port Act and the Coastal Zone Management Act, 5 GOLDEN GATE U. ENVTL. L. J. 227, 236-237 (Fall 2011).
- 130. Id. at 237.
- 131. Steve Blank, In Defense of Unreasonableness—Saving the California Coast. HUFFINGTON POST (July 2, 2013).
- See generally Sierra B. Weaver, Local Management of Natural Resources: Should Local Governments Be Able to Keep Oil Out?, 26 HARV. ENVTL. L. REV. 221 (2002).
- 133. 16 U.S.C. §1456(c)(3)(A).
- ^{134.} Chang and Dearing, Oil Companies Frack in Coastal Waters off California, supra; Allison Sider. Scale of West Coast Fracking Probed, supra.
- 135. Statement of California Coastal Commission Deputy Director Allison Dettmer, August 15, 2013 CCC Meeting, Santa Cruz, California. Video archive available at: http://www.cal-span.org (beginning at approximately 40:30).
- 136. **Id.**
- 137. Dennis Hevesi. Peter Douglas, 69, Sentry of California's Coast, Dies. NEW YORK TIMES (April 9, 2012).
- 138. 16 U.S.C. § 1531 et seq.
- 139. 16 U.S.C. § 1536(a)(2).
- 140. 16 U.S.C. § 1361 et seq.
- 141. 16 U.S.C. § 1362(18)(A)(i), (ii).
- 142. 16 U.S.C. § 1371(a)(5).
- 143. NATIONAL COMMISSION ON THE BP DEEPWATER HORIZON OIL SPILL AND OFFSHORE DRILLING, supra, at 122.
- 144. CAL. PUB. RES. CODE § 3160(a).
- 145. Id. §§ 3160(a), 3160(a)(4).



906 Garden Street Santa Barbara, CA 93101 www.EnvironmentalDefenseCenter.org