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Executive Summary

The oil and gas industry enjoys sweeping exemptions from provisions in the major federal environmental statutes intended to protect human health and the environment. These statutes include the:

- **Comprehensive Environmental Response, Compensation, and Liability Act**
- **Resource Conservation and Recovery Act**
- **Safe Drinking Water Act**
- **Clean Water Act**
- **Clean Air Act**
- **National Environmental Policy Act**
- **Toxic Release Inventory under the Emergency Planning and Community Right-to-Know Act**

This lack of regulatory oversight can be traced to many illnesses and even deaths for people and wildlife across the country. There are a variety of chemicals used during the many phases of oil and gas development. These chemicals also produce varying types of waste throughout these processes. Because of the exemptions and exclusions, toxic chemicals and hazardous wastes are permeating the soil, water sources and the air threatening human health to an alarming extent. In order to adequately remedy the negative impacts on human health and the environment, the following recommendations must be addressed:

- 1) Crude oil and petroleum must be covered under the *Comprehensive Environmental Response, Compensation, and Liability Act* in order to protect human health and the environment from spills and leaks of hazardous and carcinogenic materials on well sites. This is the only way to currently assist overburdened federal and state programs in light of the exponential growth of oil and gas development in the United States.
- 2) To protect human health and the environment, oil field wastes must be regulated under the *Resource Conservation and Recovery Act* in order to ensure the proper handling and disposal of hazardous and carcinogenic wastes generated by oil and gas development. Otherwise, the petroleum industry will continue to dispose of oil field waste in ways that can pollute soil, surface and groundwater.
- 3) Hydraulic fracturing must be regulated by the Environmental Protection Agency under the *Safe Drinking Water Act* in order to adequately protect the United State's drinking water supply from the harmful chemicals used during this process. This recommendation includes a total ban on the use of diesel fuel as one of the additives in the hydraulic fracturing process.
- 4) Stormwater discharges from all oil and gas development must be regulated under the *Clean Water Act* by the federal government in

order to provide the states with a proper foundation from which to build adequate stormwater programs that will protect human health and the environment from expanding oil and gas development.

Emissions from all oil and gas facilities must be aggregated under the *Clean Air Act* in order to ascertain the true hazardous effect on air quality. Also, hydrogen sulfide must be re-established as a hazardous air emission under the Clean Air Act in light of the current available data regarding its negative impacts on human health and the environment.

Because of the disruptive nature of oil and gas activities on human health and the environment, none of these activities ought to qualify for the categorical exclusion under the *National Environmental Policy Act*. All oil and gas activities must be assessed for impacts on the environment under the more comprehensive environmental assessment and environment impact statement in order to properly fulfill the intentions of the statute.

The petroleum industry must be made to disclose the chemicals used during the development stages under the *Toxic Release Inventory within the Emergency Planning and Community Right-to-Know Act*, in order to ensure that human health and the environment can be protected from these often-hazardous and carcinogenic substances.

One of the goals for the Oil and Gas Accountability Project is to help communities and citizens better understand and protect themselves from the health and environmental impacts associated with toxic oil and gas chemicals and wastes. The following report explains these exemptions, how they apply to oil and gas development, and the consequences to human health and the environment that are left behind. To learn more about the devastating impacts of oil and gas development, read *Oil and Gas at Your Door? A Landowner's Guide to Oil and Gas Development and Our Drinking Water At Risk: What EPA and the Oil And Gas Industry Don't Want Us to Know About Hydraulic Fracturing*, available at: www.ogap.org.

Comprehensive Environmental Response, Compensation, and Liability Act – CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 regulates the clean up of hazardous substance releases into any part of the environment, including air, water, and land. It further requires the reporting of hazardous substance releases, as well as the location of hazardous storage, treatment, and disposal sites. The statute also establishes the Superfund, a trust fund to pay for hazardous waste clean up, derived from taxes imposed on oil and chemicals, as well as fines and penalties levied by the Environmental Protection Agency (EPA).¹ Today, the fund falls short of project goals annually because over the past 10 years Congress has abolished these taxes and draws on the general tax revenue to fund this program.²

CERCLA seeks to establish a comprehensive governmental response to actual or threatened hazardous substance releases. The law is predominantly concerned with orphaned facilities-where ownership is undetermined and the site is closed or no longer operating as it once was-and sites owned or operated by persons who do not have the financial resources or who are unwilling to undertake appropriate response action. The statute also provides a federal cause of action to recover the costs incurred for responses to releases. This cause of action was intended for the federal government response program, but extends to any potentially responsible party (PRP). Under the legal doctrine of joint and several liability, PRPs are able to seek restitution from each other should any of them pay all or part of the clean costs. PRPs are broken into four distinct classes: (1) current owners and operators; (2) owners and operators at the time of disposal; (3) generators of the substances; and (4) transporters of the substances.³

CERCLA is essentially a measure through which Congress intended to gain access to the financial resources of any company that qualifies as a PRP, regardless of the PRP's degree of responsibility for the release. The Superfund Amendments and Reauthorization Act (SARA) of 1986 gave the EPA more control over settlement options with PRPs, established a strict time frame for initiating a clean up response, required assessment of the threats that individual sites pose to human health, and increased state and public participation in the decision-making process.

Generally speaking, there are four requirements necessary to establish liability under CERCLA: (1) A determination must be made that the site involved is a "facility" under the definition of the statute; (2) a "release" or "threatened release" as defined by the statute of a "hazardous substance" must have occurred at the site; (3) the government or a private party must

¹ 42 U.S.C. § 9631, repealed by Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499, 100 Stat. 1613, 1772 (codified at I.R.C. § 9507 (1988)).

² <http://www.cpeo.org/lists/brownfields/2004/msg00112.html>.

³ 42 U.S.C. § 9607(a)-(c).

have incurred response costs as a result of the release; and (4) there is a determination that the defendant is a PRP.⁴ Section 101(14) of CERCLA lists the hazardous substances that are covered under the statute. Included in the list are benzene, toluene, xylene, and ethylbenzene, each of which is an element of petroleum; inexplicably, however, the last clause of this section excludes crude oil and petroleum.⁵ Thus, hazardous chemicals that would otherwise fall under the ambit of CERCLA are immune from the statute when encompassed in petroleum or crude oil.

The negative impacts on human health and the environment resulting from this petroleum exclusion are being experienced now and could become overwhelming. Petroleum facilities that would otherwise fall under CERCLA and require PRPs to cleanup are excluded. These toxic waste dumps are left for other federal and state programs to remediate and reclaim, or simply abandoned to pollute the environment and threaten public health. These cleanup projects are often too numerous and expensive for authorities in these programs to champion.

The number of improperly abandoned and remediated well sites already overwhelms the federal agency responsible for oil and gas leasing on federal land, the Bureau of Land Management (BLM), and many states that are saturated with oil and gas development.⁶ A 2005 report by the Federal General Office of Accountability found many field office's funding and staffing to be so inadequate that most of the environmental responsibilities (e.g., inspections for proper plugging and abandoning, remediation) fell to the wayside.⁷ The Blancett family, as well as many other ranchers in the western United States can attest to the failure by state and federal remediation programs to properly address leaks, spills, and debris left at well sites on their property. Often, their land or land adjacent to theirs is strewn with petroleum waste products and debris just left by irresponsible petroleum companies. The waste products leak into soils and nearby streams poisoning livestock and wildlife.⁸

In light of the exponential growth of oil and gas development in the western United States, this is a real threat to the health and welfare of the public and the environment. CERCLA and its intended benefits are not available to the communities faced with a real or potential petroleum or crude oil release. Because of this exclusion, citizens will have to relocate and pay for medical treatment on their own while thousands of gallons of petroleum or crude oil

⁴ 42 U.S.C. § 9601(9) and (22).

⁵ 42 U.S.C. § 9601(14).

⁶ Western Organization of Resource Councils, *Filling the Gaps: How to Improve Oil and Gas Reclamation and Reduce Taxpayer Liability* (August 2005).

⁷ United States Government Accountability Office, *Report to the Ranking Minority Member, Committee on Homeland Security and Governmental Affairs, U.S. Senate, OIL AND GAS DEVELOPMENT: Increased Permitting Activity Has Lessened BLM's Ability to Meet Its Environmental Protection Responsibilities* (June 2005).

⁸ Oil and Gas Accountability Project, *Oil and Gas at Your Door? A Landowner's Guide to Oil and Gas Development*, p. IV-19 (2005). Available at: <http://www.earthworksaction.org/publications.cfm?pubID=91>.

permeate the earth and water sources in anticipation of a court decision to determine liability.

The time has come to repeal the petroleum exclusion. The federal government must react to these situations so as to protect its citizens from the hazardous and carcinogenic poisons inherent in petroleum and crude oil.

Resource Conservation and Recovery Act – RCRA

The Resource Conservation and Recovery Act (RCRA) of 1976 is currently divided into 10 subchapters: I through X, comprising four interrelated programs for the management of hazardous waste and solid waste found at Subchapters III, IV, IX, and X. Subchapter III, commonly referred to as Subtitle C, creates a federal “cradle-to-grave” hazardous waste management program. Subchapter IV, commonly referred to as Subtitle D, encourages states to develop comprehensive plans to manage primarily nonhazardous solid wastes (e.g., household waste). Subchapter IX, commonly referred to as Subtitle I, regulates the use and monitoring of underground storage tanks. Subchapter X, commonly referred to as Subtitle J, establishes regulations for medical waste from the time it is generated until the time it is disposed.

Congress defined hazardous waste in RCRA § 1004(5), but left the EPA to decide through a Regulatory Determination the specific characteristics of hazardous waste and to promulgate lists of wastes meeting those characteristics.⁹ The definition of a hazardous waste under RCRA § 1004(5) is as follows:

[A] solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may-

- A. cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
- B. pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.¹⁰

In 1978, the EPA issued proposed hazardous waste guidelines and regulations as requested by Congress. At this time, the agency was poised to consider oil field wastes as “special wastes” under Subtitle C. However, Congress responded to these proposed regulations with the Solid Waste Disposal Act (SWDA) in 1980, which exempted oil field wastes from Subtitle C entirely until the EPA could prove these wastes were a danger to human health and the environment. In 1988, the EPA's Regulatory Determination ultimately agreed with Congress’ decision to exempt oil field wastes due to the “adequate” state and federal regulations already in place and the costs

⁹ A Regulatory Determination is an agency decision founded on authority granted by Congress to determine specific details of legislation based on its expertise in the field.

¹⁰ 42 U.S.C. § 6903-6992.

and economic impacts to the petroleum industry should it be regulated under Subtitle C.¹¹

Despite the considerable regulatory changes by EPA regarding the regulation of oil field waste in determining that it was not hazardous enough to be regulated under Subtitle C, the 1988 Regulatory Determination provides a comprehensive list of wastes excluded from and included within the scope of the oil field waste exemption. A helpful article from the Director and Senior Staff Attorney at the Railroad Commission of Texas summarizes these lists. Oil field wastes typically fall into the following categories:

- 1) Produced waters-mineralized waters produced with and then separated from oil and gas.
- 2) Drilling fluids-mixtures of water, clay, barite, and other additives used in drilling wells.
- 3) Associated wastes-other wastes uniquely associated with drilling and production operations, such as crude oil tank bottoms (e.g., oil, sediment, and water).¹²

In addition, the Regulatory Determination clarifies the meaning of RCRA § 3001(b)(2)(A)'s exemption for "other wastes associated with the exploration, development or production of crude oil or natural gas" by stating that such "other wastes" include "rigwash, drill cuttings, and wastes created by agents used in facilitating the extraction, development, and production of the resource, and wastes produced by removing contaminants prior to the transportation or refining of the resource."¹³

Further clarification by the EPA in 1993 provides a rule of thumb for determining if certain oil field wastes fall within the RCRA exemption. It states, "Since 1987, the terms uniquely associated and intrinsic have been used as interchangeable synonyms in various documents in reference to oil and gas wastes qualifying for the exemption from Subtitle C regulation...A simple rule of thumb for determining the scope of the exemption is whether the waste in question has come from down-hole (i.e., brought to the surface during oil and gas E & P operations), or has otherwise been generated by contact with the oil and gas production stream during the removal of produced water or other contaminants from the product (e.g., waste emulsifiers, spent iron sponge). If the answer to either question is yes, the waste is most likely considered exempt."¹⁴

In many cases, these "other" wastes contain known carcinogens such as benzene, toluene, and xylene. The effect of the RCRA exemption is to allow these deadly chemicals that are otherwise considered hazardous within the

¹¹ 53 Fed.Reg. 25, 447.

¹² Terri Eaton and Lori Wrotenbery, Environmental Services for the Oil and Gas Division of the Railroad Commission of Texas, *State Environmental Regulation in the Oil Field* (October 1994).

¹³ 53 Fed.Reg. 25, 454.

¹⁴ 58 Fed.Reg. 25, 448.

same statute to permeate the earth and water sources poisoning the public and the environment. For example, waterfowl, wildlife, and livestock may be attracted to open pits and tanks used to store and/or dispose of oil, produced water, or separate oil from produced water. The risks posed to wildlife have been documented in numerous studies. In Wyoming, the U.S. Fish and Wildlife Service has found deer, pronghorn, waterfowl, songbirds, and rabbits in these open pits and tanks. Even if the animals are not killed in these areas, the oil and chemicals can have debilitating health effects.¹⁵ Despite a few state regulations pertaining to oil and gas field wastes, it is typical for the oil and gas industry to dispose of these wastes in earthen pits and on-site burial.¹⁶ The potential for migration of contaminants in the soil and water sources in these areas is at the very least concerning to those who live in the oil and gas patches.

Relying on 1985 data, the EPA estimated that 70,000 oil and gas wells and 800,000 active production sites generated 361 million barrels of drilling waste, 20.9 billion barrels of produced waters, and 11 million barrels of associated wastes, such as workover fluids and tank bottoms.¹⁷ Considering the exponential growth of the oil and gas industry over the past 20 years, it is time regulators focus on the adequacy of existing regulations to protect human health and the environment from the real and potential dangers of the oil and gas industry's waste.

The Safe Drinking Water Act – SDWA

The Safe Drinking Water Act (SDWA) of 1974 was established to protect the quality of drinking water in the United States. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources. The SDWA was amended through the comprehensive Energy Policy Act in 2005.

The 2005 amendment managed to effectively dilute the protections provided to the public by the SDWA in three ways. First, hydraulic fracturing (fracking) operations were completely exempted from regulation under the SDWA. Second, the Energy Policy Act asked for the voluntary discontinuance of diesel fuel use in fracking operations in lieu of seizing the opportunity to ban diesel fuel use altogether. Lastly, underground injection in oil and gas operations was defined so as to alleviate the EPA from regulating threats to drinking water from fracking fluids unless diesel fuel additives are used; this remains a discretionary regulation of diesel fuel additives on the part of the EPA.¹⁸ The last prong of the exemption simply provides more legislative support for EPA's decision to not regulate fracking operations even if diesel fuels are being injected into underground drinking water sources.

¹⁵A list of studies can be found in: Pedro Ramirez Jr., U.S. Fish and Wildlife Service, "Wildlife Mortality Risk in Oil Field Waste Pits," *Contaminants Information Bulletin* (December 2000).

¹⁶ New Mexico Energy, Minerals and Natural Resources Department, *New Mexico Follow-up and Supplemental Review – State Review of Oil and Natural Gas Environmental Regulations*, p. 6 (2001).

¹⁷ 53 Fed.Reg. 25, 448.

¹⁸ <http://energycommerce.house.gov/legviews/108lvhr0006-oilgas.shtml>.

Fracking is a technique used to stimulate oil and gas production from conventional oil and gas wells, as well as nonconventional oil and natural gas sources (e.g., coalbed methane, tight sands). Typically, it involves high-pressure injection of water, sand, and chemicals into underground geological formations, which causes the formations to fracture. The fracturing then allows the various petroleum products to flow more easily to production wells.

Fracking fluids typically contain a host of chemicals used to optimize the fracturing process. These additives include gels, polymers, biocides, fluid loss agents, thickeners, enzyme breakers, acid breakers, oxidizing breakers, friction reducers, and surfactants. Some of these chemicals are toxic simply in their pure form exclusive of their effect when combined and injected into groundwater-bearing formations.¹⁹

EPA has determined that in some cases, fracking chemicals are injected directly into underground sources of drinking water (USDW) during the course of normal coalbed methane (CBM) fracturing operations.²⁰ While not all coal formations are USDWs, the EPA has stated that 10 out of 11 CBM basins in the U.S. are located at least in part within USDWs. The co-location of coalbeds and USDWs is known to occur in Alabama, Arkansas, Colorado, Kansas, Montana, New Mexico, Virginia, Washington, West Virginia, and Wyoming. There are possible co-locations in Nebraska, Pennsylvania, and Kentucky.²¹

The above information was generated by the EPA in a report the agency released in 2004 on the environmental risks posed by the fracking of coalbeds. This study was intended to assess the potential for fractured coalbeds to contaminate USDWs. Phase I of this study was launched in 2000; the findings of this phase would determine if further studies were necessary.²²

The EPA released its final version of the Phase I study in 2004 entitled, *Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs*. The main finding of this study stated, "the injection of hydraulic fracturing into CBM wells poses little or no threat to Underground Sources of Drinking Water."²³ The Energy Policy Act of 2005 codified this finding and provided the legislative vehicle to deregulate hydraulic fracturing except when diesel fuels are used and even then regulation by the EPA would be discretionary.

¹⁹ U.S. Environmental Protection Agency, *Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs*, EPA Document# 816-R-04-003, pp. 4-5 (June 2004).

²⁰ *Id.* at p. ES-1.

²¹ *Id.* at Chapter 5.

²² *Id.* at p. 2-1.

²³ *Id.* at p. ES-16.

Unfortunately, the EPA's findings are not consistent with the numerous personal accounts of those living in oil and gas patches around the country. Peggy Hocutt and her husband retired to their house on the river in Jefferson County, Alabama. After years of mysterious ailments affecting everyone in the area and tap water that smelled of petroleum, Mrs. Hocutt had black, jellied grease coming out of her faucets. She and many of her neighbors also had cancer. The energy company hydraulically fracturing in that area and the state of Alabama refused to admit that their aquifer had been contaminated by fracking activities. Instead, the company refused to renew their land lease and evicted them from the property. They lost their physical and mental wellbeing, as well as a forty-year investment in their retirement home.²⁴

The EPA has been highly criticized by internal staff, federal legislators, and respected peers on the 2004 study. Each of these critics has challenged the EPA's conclusions while insisting that additional studies be conducted under a non-bias peer review panel.²⁵ These are the necessary steps to take in order to determine the information critical to assessing Congressional and EPA compliance with the mandates under the SDWA to protect the United States' drinking water sources.

Clean Water Act – CWA

Growing public awareness and concern for controlling water pollution led to the enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the Clean Water Act (CWA). The CWA established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry. The CWA also continued requirements to set water quality standards for all contaminants in surface waters. It also made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.²⁶

From 1987 until 2005, the oil, gas, and mining operations exemption provided that no CWA permit was required for stormwater runoff at oil and gas exploration, production, processing and treatment operations, and transmission facilities where the runoff consisted entirely of flows from conveyances such as pipes and ditches for rainwater collection, provided that the runoff was not contaminated by contact with raw materials or wastes.²⁷ However, the EPA decided in two prior phases of stormwater permitting, 1990 and 1999, to assert its authority to regulate certain stormwater

²⁴ Oil and Gas Accountability Project, *Oil and Gas at Your Door? A Landowner's Guide to Oil and Gas Development*, p. IV-4 (2005). Available at: <http://www.earthworksaction.org/publications.cfm?pubID=91>.

²⁵ Oil and Gas Accountability Project, *Our Drinking Water At Risk: What EPA and the Oil and Gas Industry Don't Want Us to Know About Hydraulic Fracturing*, p. 2 (2005). Available at: <http://www.earthworksaction.org>.

²⁶ www.epa.gov.

²⁷ 33 U.S.C. § 1342(1)(2).

discharges from oil and gas construction sites based on the belief that sediment from the construction site constitutes a pollutant. This action was justified because of the effects of large amounts of sediment being discharged into surface waters over a short period of time. The 1990 rule regulated activities disturbing five or more acres of land.²⁸ The 1999 rule added the regulation of activities disturbing one to five acres of land.²⁹

Despite the EPA's efforts over the past 15 years to maintain these stormwater regulations, the 2005 Energy Policy Act amended the CWA to provide that sediment is no longer considered a pollutant. The broadened exemption provided in the 2005 Energy Policy Act applies to all oil and gas field construction activities and operations, including those necessary to prepare a site for drilling and for the movement and placement of drilling equipment. The EPA has confirmed this interpretation by stating, "all covered oil and gas-related construction activities are eligible for the NPDES permitting exemption for their uncontaminated stormwater discharges without regard to the amount of acreage disturbed."³⁰

The EPA further clarified the broad application of the exemption to construction sites as "[f]ield activities or operations" include "the construction of drilling sites, drilling waste management pits, access roads, in-field treatment plants and the transportation infrastructure (e.g., crude oil and natural gas pipelines, natural gas treatment plants and both natural gas pipeline compressor and crude oil pump stations) necessary for the operation of most producing oil and gas fields."³¹ "Processing" includes both oil and gas field activities and involves removal of contaminants such as salt water, sediment, pipe scale, rust and organic material, most commonly in a separator. "Transmission" includes all necessary infrastructure to deliver natural gas or crude oil from the producing fields to the final distribution center (for natural gas) or refinery (for crude oil).³²

The 2005 Energy Policy Act and the subsequent EPA concession to exempt sediment from regulation under the CWA for oil and gas construction activities is inconsistent with past agency decisions because the exact same sediment from construction sites has required a stormwater discharge permit for the past 15 years at the insistence of the EPA. Has the sediment from oil and gas construction sites changed dramatically in the past few years such that it can no longer be considered a pollutant? Furthermore, the CWA requires other industries to obtain a stormwater permit on the basis that its sediment is considered a pollutant.³³ Does the oil and gas industry deserve preferential treatment over other industries in the United States?

²⁸ 55 Fed.Reg. 47990 (November 16, 1990).

²⁹ 64 Fed.Reg. 68721 (December 8, 1999).

³⁰ 71 Fed.Reg. at 33631-33632.

³¹ 71 Fed.Reg. at 33635-33636.

³² 71 Fed.Reg. at 33635-33636.

³³ 33 U.S.C. § 1342(p)(3)(A).

Landowners in the oil and gas patch would certainly disagree with the EPA's finding that sediment from petroleum sites and stormwater from oil and gas fields do not qualify as pollutants. Ed Swartz owns a ranch in Campbell County, Wyoming. He believes the best feature of his property to be Wildcat Creek, which meanders about eight miles through his ranch irrigating an important grazing field. Stormwater and produced water from his neighbor's gas pad flooded his creek and destroyed his grazing and hay fields. This is an expense that was left for him to bear because of the CWA exemption for oil and gas activities.³⁴

It is important to note that despite the federal government's refusal to regulate stormwater discharges by the oil and gas industry, individual states and tribes may regulate stormwater associated with these activities under their own independent authority.³⁵ Colorado Department of Public Health and the Environment (CDPHE) serves as a progressive example in this area. It has maintained the stormwater permit requirement for oil and gas construction sites that was removed by the 2005 Energy Policy Act.³⁶

However, this problem is often too large for a state program to monitor on its own. In May of 2007, the Colorado Oil and Gas Conservation Commission cited one exploration company nine times for wells that had insufficient stormwater runoff protections. Because of the insufficient drainage, each of the nine well sites had flooded from snowmelt and oil was visible in various areas around each wellpad. In one case, the oil-laden snowmelt was discharging into a nearby creek.³⁷ In light of the exponential growth of oil and gas exploration and production, the federal government ought to assist the states by adopting minimum regulations to provide a floor upon which states can build adequate stormwater regulatory programs for the petroleum industry to protect our precious surface water resources.

The Clean Air Act – CAA

The Clean Air Act (CAA) is the comprehensive federal law that regulates air emissions from area, stationary, and mobile sources. This law authorizes the EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment. The goal of the CAA was to set and achieve NAAQS in every state by 1975. The setting of maximum pollutant standards was coupled with directing the states to develop state implementation plans (SIP's) applicable to appropriate industrial sources in that state.

³⁴ Oil and Gas Accountability Project, *Oil and Gas at Your Door? A Landowner's Guide to Oil and Gas Development*, p. IV-4 (2005). Available at: <http://www.earthworksaction.org/publications.cfm?pubID=91>.

³⁵ EPA states "[t]his final rule is not intended to interfere with the ability of States, Tribes, or local governments to regulate any discharges through a non-NPDES permit program." 71 Fed.Reg. at 33635.

³⁶ Colorado Department of Public Health and the Environment, Water Quality Control Division, Stormwater program, *Stormwater Factsheet-Construction at Oil and Gas Facilities*, pg. 1 (July 2007).

³⁷ Rocky Mountain News, *Driller Leaves Mess Behind: Nervous Neighbors Seek Answers from Oil, Gas Commission* (July 19, 2007).

The CAA was amended in 1977 primarily to set new goals, specifically dates, for achieving attainment of NAAQS since many areas of the country had failed to meet the deadlines. The 1990 amendments to the CAA in large part were intended to meet unaddressed or insufficiently addressed problems such as acid rain, ground-level ozone, stratospheric ozone depletion, and air toxics.³⁸

The CAA program to control major sources of pollutants has established limits called the National Emission Standards for Hazardous Air Pollutants (NEHAPS). The standards must be met by installing the Maximum Achievable Control Technology (MACT) for each source.³⁹ Smaller sources of pollutants that are under common control and are located in close proximity to perform similar functions are considered as one source of emissions. This aggregation is intended to regulate smaller sources that may actually be as harmful as larger sources due to the concentration of emissions.

The CAA provides that oil and gas wells, and in some instances pipeline compressors and pump stations, shall not be aggregated together to determine if they are subject to the provisions that establish NEHAPS and thus require MACT. This exemption to the aggregation requirement allows the oil and gas industry to pollute the air while being largely unregulated under the CAA. Despite efforts by individual states and tribes to implement their own regulations, these generally fall short of addressing the air pollution problems across the country because the oil and gas industry is growing exponentially and rapidly expanding into new areas.

In Colorado alone, oil and gas exploration and production emits on average approximately 70,000 tons of volatile organic compounds (VOCs) and 30,000 tons of nitrogen oxide per year.⁴⁰ VOCs produce smog when combined with nitrogen oxides, sunlight, and heat.⁴¹ Oil and gas operations also release approximately 20,000 tons of carbon monoxide per year, which is more than twice the amount released by all coal and natural gas fired power plants in Colorado.⁴²

Fortunately, Colorado recently implemented regulations to reduce VOCs from oil and gas operations in the state and increased reporting requirements.⁴³ Despite these regulatory improvements, the fact remains that record numbers of drilling permits have been issued in several western states this past year and oil and gas wells are totally exempt from federal air quality

³⁸ www.epa.gov.

³⁹ 42 U.S.C. § 7412(n)(4).

⁴⁰ Rocky Mountain Clean Air Action Power Point Presentation on Air Pollution from Oil and Gas Development and Proposed Colorado Smog Reductions (2007). Available at: <http://www.ourcleanair.org/Resources.html>.

⁴¹ Oil and Gas Accountability Project, *Oil and Gas at Your Door? A Landowner's Guide to Oil and Gas Development*, p. I-53 (2005). Available at: <http://www.earthworksaction.org/publications.cfm?pubID=91>.

⁴² Rocky Mountain Clean Air Action Power Point Presentation on Air Pollution from Oil and Gas Development and Proposed Colorado Smog Reductions (2007). Available at: <http://www.ourcleanair.org/Resources.html>.

⁴³ <http://www.cdphe.state.co.us/ap/oilgas.html>.

regulations. While regulations by individual states and tribes are a step in the right direction, the federal government needs to set floor standards from which all states with oil and gas development can build upon to improve national air quality.

Hydrogen sulfide leaks are another serious air quality concern resulting from oil and gas development. In 1997, Carol Browner, former Administrator of the EPA admitted in no uncertain terms that hydrogen sulfide was eliminated from the Clean Air Act list of extremely hazardous substances by powerful oil and gas lobbying.⁴⁴ This elimination occurred in spite of the EPA study, *Hydrogen Sulfide Air Emissions Associated with the Extraction of Oil and Natural Gas*, which documented a large number of oil and gas related accidents occurring in North America and concluded that accidental releases of hydrogen sulfide pose a great risk to public health.⁴⁵

Accidental and intentional releases of hydrogen sulfide may occur at sour gas well operations. Sulfur dioxide and trioxide form when hydrogen sulfide is burned at these facilities, which further contributes to air pollution and health problems. Furthermore, because hydrogen sulfide is heavier than air it often settles in low-lying areas where it can accumulate in concentrations that can injure or kill livestock, wildlife, and human beings.⁴⁶

Common symptoms affecting those exposed to chronic, periodic, or puff releases of low levels of hydrogen sulfide include: headache, skin complications, respiratory and mucus membrane irritation, respiratory soft tissue damage and degeneration, confusion, impairment of verbal recall, memory loss and prolonged reaction time.⁴⁷

Dr. Kaye Kilburn, considered by some to be the world's foremost authority on hydrogen sulfide poisoning, recently discussed one compelling incident in California.⁴⁸ "Some of you will remember the 1992 earthquake at Long Beach and Wilmington. That turned out not to be an earthquake at all, but it was an explosion of the desulphurization plant at Texaco down north of Pacific Coast Highway. Twenty thousand people, at least, were exposed to hydrogen sulfide. What does it do to children? Well, from two schools, special education teachers came to me for their own problems, and then said, 'I have students who were passing and can't pass anymore. I have had more referrals for special education since that explosion than I ever remember having, and I have seen many children drop out of school because they're uneducable.' If this is what we want as a Belmont High School, we

⁴⁴ Carol Browner's comments were stated during her presentation at the November 1997 National Public Health Convention in Indianapolis, Indiana, and aired nationally during the documentary "Town Under Siege," narrated by Ed Bradley, December 23, 1997.

⁴⁵ *Survey of Accidental and Intentional Hydrogen Sulfide Releases Causing Evacuations and/or Injuries in Manistee and Mason Counties from 1980 to 2001*, pg. 3.

⁴⁶ La Plata County (Colorado), *La Plata County Impact Report*, pg 3-105 (2002).

⁴⁷ Kilburn, Kaye, "Hydrogen Sulfide and Reduced-sulfur Gases Adversely Affect Neurophysiological Functions," *Toxicology and Industrial Health*. Vol. 11, No. 2. pp. 192-193 (1995).

⁴⁸ <http://www.fulldisclosure.net/Transcripts/2005/02/transcript-from-dutton-interview-20905.html>.

already have seen at Wilmington School how this plays out. I don't really think it can be justified to do the experiment again. It was conclusive the first time."

In light of the information available on the amounts of toxins the oil and gas industry is emitting into the air and the known health impacts on the public and the environment, the federal government has a duty to reconsider the applicable CAA exemptions. Furthermore, the elimination of hydrogen sulfide as an extremely hazardous substance from the Act is completely unacceptable considering the information available regarding the negative impacts on human health and the environment.

National Environmental Policy Act – NEPA

The National Environmental Policy Act (NEPA) was one of the first laws ever written that establishes the broad national framework for protecting our environment.⁴⁹ NEPA's basic policy is to assure that all branches of government give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment.

In order for the proper consideration requirement to be met, federal agencies must take a hard look and disclose any possible and real impacts on the environment resulting from the proposed action and the offered alternatives. In most instances this also requires the opportunity for public comment on this action and the alternatives. NEPA requires that federal agencies first conduct an environmental assessment (EA) to determine if there will be significant impacts on the environment from the proposed action. If the agency finds there will be a significant impact, it is then required to conduct the more stringent environmental impact statement (EIS) in order to meet the proper consideration and opportunity for public comment requirements. Each of these documents, in different levels of detail, lay out the specifics of the proposed action, the alternatives, and the associated impacts on the environment.

The Energy Policy Act of 2005 created a "rebuttable presumption" that several oil and gas related activities ought to be analyzed and processed by the Interior and Agricultural Departments under a less stringent process known as a "categorical exclusion" (CE). The CE is considerably less comprehensive than the traditional environmental assessment (EA) or the environmental impact statement (EIS) and does not allow for any public comment. The activities eligible for the CE include:

- 1) Individual surface disturbances of less than five acres so long as the total surface disturbance on the lease is not greater than 150 acres

⁴⁹ 42 U.S.C. § 4321 et seq. (1969).

and site-specific analysis in a document prepared pursuant to NEPA has been previously completed.

- 2) Drilling an oil or gas well at a location where drilling occurred previously within five years prior to the date of spudding the well.
- 3) Drilling a well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed such drilling as a reasonably foreseeable activity, so long as such plan or document was approved within five years prior to the date of spudding the well.
- 4) Placement of a pipeline in an approved right-of-way corridor, so long as the corridor was approved within five years prior to the date of placement of the pipeline.
- 5) Maintenance of a minor activity, other than any construction or major renovation or a building or facility.⁵⁰

Under the “rebuttable presumption,” section 390 effectively shifts the burden from the agency to the public to prove that an activity requires further analysis. Prior to 2005, the agency had the burden of showing that no harm will occur from the type of activity at issue. Now, the public has the burden of proving that the above activities occur in an area with “extraordinary circumstances” and require a full NEPA review. “Extraordinary circumstances” are those in which a normally excluded action may have a significant environmental effect, thus requiring additional analysis and action.⁵¹

Section 390 has significantly hampered the opportunity for public involvement in major oil and gas activities in contravention to the original intentions of NEPA by allowing federal agencies to permit oil and gas operations more easily without having to consider or address the concerns of nearby landowners. The ultimate effect of this exclusion is to give the oil and gas industry a blanket permit to threaten public health and the environment in the name of administrative efficiency. This is just one more tool used by the oil and gas industry to streamline their piracy and contamination of the American public.

The Toxic Release Inventory of EPCRA

The Toxic Release Inventory (TRI) was created by section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) in 1986. It contains detailed toxic chemical release reports submitted by manufacturing, mining, electric utility, RCRA subtitle C, solvent recovery, chemical distributor, and petroleum bulk facilities to the EPA. The information is generated and disseminated to the public for their protection.⁵²

⁵⁰ The Energy Policy Act of 2005, Section 390.

⁵¹ *Id.*

⁵² EPA Guidance Document: The Emergency Planning and Community Right-to-Know Act-Section 313 Release and Other Waste Management Reporting Requirements (2001).

The information on chemical use and release includes: point and fugitive on-site air releases, water releases, on and off-site land releases, underground injection, transfers to a Publicly Owned Treatment Works (POTW) or waste management facility, including the name and address of the facility, and specific on-site waste treatment and management practices.⁵³

Those who must report their releases include any facility that has 10 or more full-time employees, is in a listed SIC code, and processes or manufactures more than 25,000 lbs of a listed chemical or otherwise uses more than 10,000 lbs; or processes, manufactures, or otherwise uses more than 1/10 gram, 10lbs, or 100lbs of a listed Persistent, Bioaccumulative and Toxic (PBT) chemical (e.g., brominated flame retardants).⁵⁴

The exploration and production of oil and natural gas meet the criteria for those who must report. Generally, they have 10 or more full-time employees involved in the construction and operation of each individual drilling site, their listed SIC code is 13, and they “otherwise use” more than 10,000 lbs of a listed chemical (e.g., benzene, toluene and xylene). Furthermore, the oil and gas industry releases include point and fugitive on-site air, land and water sources. However, EPA has chosen to abdicate its responsibility under the EPCRA to inform the public about these toxic releases by exempting the oil and gas industry from reporting under section 313.

The petroleum industry is emitting thousands of pounds of toxic chemicals into our environment.⁵⁵ Communities large and small are adversely affected by their ignorance to the toxic substances being released into their environment. The EPA allows the industry this luxury under the exemptions to the EPCRA. It is time for the federal government to stop abdicating its duty under the EPCRA to require the oil and gas industry to report its toxic emissions.

⁵³ Id.

⁵⁴ Id.

⁵⁵ <http://apcd.state.co.us/>.

Conclusion

In order to adequately remedy the negative impacts on human health and the environment, the following recommendations must be addressed:

- 1) Crude oil and petroleum must be covered under the Comprehensive Environmental Response, Compensation, and Liability Act in order to protect human health and the environment from spills and leaks of hazardous and carcinogenic materials on well sites. This is the only way to currently assist overburdened federal and state programs in light of the exponential growth of oil and gas development in the United States.
- 2) To protect human health and the environment, oil field wastes must be regulated under the Resource Conservation and Recovery Act in order to ensure the proper handling and disposal of hazardous and carcinogenic wastes generated by oil and gas development. Otherwise, the petroleum industry will continue to dispose of oil field waste in ways that can pollute soil, surface and groundwater.
- 3) Hydraulic fracturing must be regulated by the Environmental Protection Agency under the Safe Drinking Water Act in order to adequately protect the United State's drinking water supply from the harmful chemicals used during this process. This recommendation includes a total ban on the use of diesel fuel as one of the additives in the hydraulic fracturing process.
- 4) Stormwater discharges from all oil and gas development must be regulated under the Clean Water Act by the federal government in order to provide the states with a proper foundation from which to build adequate stormwater programs that will protect human health and the environment from expanding oil and gas development.
- 5) Emissions from all oil and gas facilities must be aggregated under the Clean Air Act in order to ascertain the true hazardous effect on air quality. Also, hydrogen sulfide must be re-established as a hazardous air emission under the Clean Air Act in light of the current available data regarding its negative impacts on human health and the environment.
- 6) Because of the disruptive nature of oil and gas activities on human health and the environment, none of these activities ought to qualify for the categorical exclusion under the National Environmental Policy Act. All oil and gas activities must be assessed for impacts on the environment under the more comprehensive environmental assessment and environment impact statement in order to properly fulfill the intentions of the statute.

The petroleum industry must be made to disclose the chemicals used during the development stages under the Toxic Release Inventory within the Emergency Planning and Community Right-to-Know Act, in order to ensure

that human health and the environment can be protected from these often-hazardous and carcinogenic substances.

The exemptions and exclusions described herein have been touted as necessary to the survival of the oil and gas industry in a difficult and volatile global market. However, the industry has been reporting staggering profits for years. These profits have been made at the expense of the public health and the environment. The time is ripe for sweeping legislative reforms that will bring the oil and gas industry in line with all other industries in this country.

Acknowledgements

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About the Oil and Gas Accountability Project and Earthworks

EARTHWORKS begins our work where materials leave the earth—where we mine, drill and dig—to promote stewardship throughout the life-cycle of minerals, materials and products. Our mission is to protect communities and the environment from the impacts of destructive mineral development in the U.S. and worldwide. We fulfill our mission by working with communities and grassroots groups to reform government policies, improve corporate practices, and influence investment decisions. We work to encourage conservation, recycling, responsible materials policies, fuel efficiency, and renewable energy sources. We expose the health, environmental, economic, social and cultural impacts of irresponsible mineral development through work informed by sound science.

In 2005 OGAP merged with EARTHWORKS to create efficiencies and bolster strategic synergies and effectiveness. The merger also responded to the changing politics of oil and gas and mining issues, strengthening our ability to promote new, innovative strategies and solutions. OGAP works with people in tribal, urban and rural communities to protect their homes and the

environment from the devastating impacts of oil and gas development. In our seven-year history, we have succeeded in building alliances with economically, racially and politically varied constituencies. By bringing together diverse partners to work towards a common – and critically important – goal, we strengthen these citizen efforts to bring about real, lasting change.

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