A Brief Overview Of Legal Issues Arising From Shale Gas Development and Fracing
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I. INTRODUCTION

Shale gas exploration has quickly become a fundamental cornerstone of our nation's strategic energy program, as well as both a highly lucrative area for economic development and a polarizing issue for politicians, environmentalists, and normal citizens alike. It is, perhaps, because shale gas exploration and development is so environmentally and economically important that it sits at the forefront of such a diverse group's set of interest.

It would be impossible to condense all of the issues concerning shale gas exploration and development into one paper. Thus, for our purposes, we shall explain five key areas essential to understanding the legal landscape of the fracing industry in the United States today. First, this paper will analyze the importance of developing domestic shale gas plays. Second, it will analyze some of the unique legal issues common to most fracing operations. Third, it will briefly analyze the nature of the legal claims currently being made. Fourth, it will analyze some of the future legal concerns that the industry will likely face. Finally, this paper will conclude by analyzing some of the legislative developments throughout the United States concerning fracing and provide resources for the practitioner to locate and monitor many of these key issues.

II. IMPORTANCE OF DEVELOPING SHALE GAS IN FRACING OPERATIONS

A. Natural Gas Development By the Numbers.

At the onset, it is important to note that shale gas supplies have dramatically increased over the last ten years. In 2000, shale gas accounted for just 1% of the American natural gas supplies. Today, that number is approximately 25% with some estimates that it will raise to 50% within the next decade. Thus, after taking into account U.S. and Canadian shale gas supplies, the U.S./North American natural gas resource base is currently estimated at 2,500 trillion cubic feet (Tcf).

Many experts estimate that, given those vast resources, the United States will become a net exporter of natural gas in the years to come. Further, it is important to note that those supply estimates are based upon current technology, not taking into account potential developments that could occur in exploring and developing natural resources in the years to come.

It goes without saying, therefore, that due to shale gas development, the price for natural gas has generally decreased, while the supply of that commodity has increased. This has created a situation of economic opportunity for many diversified chemical and petrochemical companies throughout the United States, and alleviated some issues concerning both the importation of energy to the United States and the exportation of developmental facilities to areas with higher natural gas reserves.

The Department of Energy recently provided U.S. natural gas production numbers through 2035 showing that shale gas development in the United States would not only account for a larger percentage of development, but would nearly double the United States’ natural gas output over the next 25 years.

B. Where is Natural Gas Being Developed
There are a number of natural gas shale plays in the lower 48 states centering around the Northeast into the Southwest with spotted pockets throughout the Midwest. The most famous of these are the Marcellus, Fayetteville, Woodford, Barnett, Haynesville-Bossier, and Eagle Ford shales.

Each of these locations occasions different legal concerns, while each carries the same economic importance, same environmental concerns, and to a certain extent a common list of problems.

III. ISSUES UNIQUE TO FRACING

A. Environmental Concerns

It may come as a surprise to many, given the recent publicity concerning alleged groundwater contamination and even earthquakes allegedly resulting from fracing operations, but the most common environmental concern in shale gas development and fracing operations results from improperly maintained sludge and fracing pits, as well as improperly disposed fracing fluid. Fracing fluids and well development wastes may contain methane, ethane, volatile organic compounds (such as benzene, toluene, ethyl benzene, and xylene often collectively referred to as "BTEX") and other normally occurring radioactive materials ("NORMs") which can be hazardous to both health and the environment if not properly contained and disposed of during fracing operations. Thus, ensuring that waste pits and waste wells are properly maintained and utilized is perhaps one of the most important protections against encountering environmental issues while conducting shale gas and development fracing operations.

Yet another often overlooked environmental concern that has spurned both litigation and legislation is alleged air emission pollution caused by fracing operations. Many forms of fracing operations utilize various types of carbon silica, other types of particulate matter, nitrogen oxides, sulfur oxides, carbon dioxide and carbon monoxide. Routine fracing operations may sometimes inadvertently vent those substances into the atmosphere affecting the air quality of the surrounding area. Some cases have specifically analyzed this issue under both the trespass and environmental pollution type theory. To date, however, most cases have been unsuccessful – ultimately finding that the di minimus amount of alleged air pollutants were not a cause of any alleged pollution or injury. In fact, a recent studies by the National Ambient Air Quality Standards Board around the air around continuous fracing operations "did not reveal any significant health threats" to air quality, and that particulate matter and ozone rates surrounding areas of intense fracing operations were no higher than those frequently found in normal urban areas.

Finally, perhaps the most prominent environmental concern regarding fracing is groundwater contamination. To date, two principal concerns on groundwater contamination have moved to the forefront. First are contaminations allegedly linked to the fracing process itself, including allegations that injected fracing fluids (and resulting natural gas) contaminated drinking water wells or aquifers. Second, there have been several alleged cases where the above-mentioned sludge and disposal pits for spent fracing fluids were mismanaged causing surface spills that thereafter allegedly seeped into low-level drinking wells.

As also noted above, poor handling practices have caused isolated events of surface contamination due to faulty sludge pits and other faulty disposal practices. It should be noted, however, that those events are almost always the result of poor containment practices, and therefore are not a condemnation of shale gas development as a whole. As discussed below, multiple layers of regulation are implemented to prevent surface contamination, and the fact that any contamination occurs is generally regarded as a failure of well-established and implemented best practices.

Below ground contamination, however, is a much touchier subject, and an often misrepresented issue. In short, there is little to no empirical scientific data to support the theory that properly conducted fracing operations cause any mode of groundwater contamination.

For example, the Commissioner of the New York State Department of Environmental Conservation, while expressing the need to study the impact of water consumption on public water supplies, has publicly testified that no realistic risk of groundwater contamination from the fracing process exists. In making that finding, the Environmental Conservation Department specifically noted that "it is important to understand that the hydraulic fracturing takes place many thousands of feet under ground, well below any groundwater zone."
Groundwater zones are typically hundreds, not thousands, of feet below the surface. The same geology that is sealed in natural gas in the rocks for millions of years – together with shale's strict well casing and cementing requirements – prevents any risk of groundwater contamination from the drilling and fracing operation. As a result, the only likely vector for possible threats to groundwater comes from the surface management of water used in the drilling and fracing operations."

In the same manner, the Interstate Oil and Gas Compact Commission – a multi-state entity charged with studying environmental and energy concerns – recently agreed to those findings. In its report, it "concluded that that the injection of hydraulic fracturing fluids poses little or no threat to underground sources of drinking water. Although thousands of wells are fractured annually, the Environmental Protection Agency has not found a single instance of the contamination of drinking water wells by hydraulic fracturing fluid injection. Effective state regulation has made hydraulic fracturing a safe and environmentally sound way to maximize and conserve our nation's resources."

Recently, the EPA issued a report concerning potential groundwater contamination in Pavilion, Wyoming. That report is still in its preliminary stages, and is out for peer review while this article is being published. As a preliminary matter, however, it is important to note that even the EPA has admitted that the report does not suggest that hydraulic fracturing operations are in any way unsafe. In fact, EPA officials recently testified that the report "makes it clear that the causal link to hydraulic fracturing has not been demonstrated conclusively, and that our analysis is limited to the particular geological conditions in the Pavilion gas field and should be assumed to apply to fracting in other geological settings."

The University of Texas Energy Institute released a report on shale gas development in February 2012. The most publicized finding of the report was that researchers found no direct connection between fracing and groundwater contamination. The Institute's Report suggests, instead, that the environmental effects of shale gas development arise from the drilling process itself, and that these effects can be mitigated through such efforts as better casing standards and spill prevention programs.

In short, with the tens, if not hundreds of thousands of fracing wells—compounded with the constant testing and research concerning the environmental impact of those wells—the fact that there still has not been a verified scientific link between contemporary regulated fracing operations and groundwater contamination speaks volumes of care and safety that is taken to conduct those operations in the United States. It should also be noted that the EPA will be issuing a comprehensive report concerning fracing operations in North Dakota, Texas, Pennsylvania, and Louisiana and in the coming years, and is in the process of concluding a two-year study of the environmental impact on hydraulic fracturing in the United States.

**IV. LEGAL CLAIMS BEING MADE**

Shale gas exploration and development attracts a significant regulatory and legislative response, as well as various types of litigation.

**A. Types of Cases**

The legal cases occurring in shale gas plays are diverse. We recently surveyed some 47 cases that arise from shale gas development, and those cases represent the general cross sample of the various types of lawsuits we have seen nationally. Those 47 surveyed disputes included:

- 17 alleged breach of lease agreements;
- 14 alleged water contamination claims due to fracing;
- 2 nuisance actions, alleging excessive emissions, noise and light from drilling that interfere with the enjoyment of the plaintiffs' property;
- 2 claims – one from a municipality and another from an environmental group – seeking a complete ban of drilling operations in the specific region; and,
- 2 claims of personal injury actions by former drilling company employees (one by those handling allegedly hazardous fracing materials, and the other arising out of a fire at a drilling pad).
Interestingly, 14 of these suits were either originally brought or removed to federal court, meaning that the development of case law on each of these issues can be expected in the near future.

Other claims that we have seen include suits by drilling companies to enjoin municipalities' enforcement of fracing bans; suits by individual homeowners to recover damages sustained in earthquakes allegedly caused by fracing; suits by municipalities to recover for damages to roads caused by drilling company vehicles; suits by drilling companies against municipalities for denial of setback variances; and suits against drilling companies for violations of the Clean Water, National Environmental Policy, and Federal Resources Conservation and Recovery Acts.

B. Who is Involved?

Not surprisingly, an active number of plaintiff attorneys with offices near shale gas plays are recurring characters in these suits. For example, the conglomerate calling itself the North Texas Litigation Group has appeared as counsel for plaintiffs in a large number of disputes arising out of the Barnett (none of which were included in this review). The group is actively promoting litigation against oil and gas companies involved in shale gas operations, and has included over a hundred (100) petitions and complaints for Barnett Shale actions on its website for review and use in bringing lawsuits.

Unlike mature shale plays, Eagle-Ford's litigation scene has not been fully developed. Reports from that burgeoning play, however, have detailed complaints of alleged water contamination, alleged excessive emissions, road damage and lease disputes. Furthermore, the same plaintiffs' attorneys are already publicizing their services in that area, and are planning to open offices in the region.

C. Recent Notable Cases.

The following is a sample, in bullet point format, of some of the recent notable cases:

1. A Trio of Barnett Shale Contamination Cases.

   Plaintiffs' counsel in all three is the Turley Law Firm.

   - **Scoma v. Chesapeake Energy Corp.**
     - Plaintiffs (husband and wife homeowners) claim orange/yellow coloring of the water, bad taste, and foul odor. Plaintiffs allege increase in the concentration of BTEX, barium, and iron in their water.

   - **Mitchell v. Encana Oil & Gas (USA), Inc.**
     - Plaintiff alleges that her well water began to feel slick to the touch and give off an oily, gasoline-like odor.

   - **Harris v. Devon Energy Production Company, L.P.**
     - Plaintiffs allege water from two wells on plaintiffs' property became contaminated in April 2008 with a gray sediment. Plaintiffs claim to have testing results showing water contamination with high levels of metals.

2. Range Resources Litigation.
On December 7, 2010, the EPA issued to Range Resources an emergency administrative order pursuant to Safe Water Drinking Act (§1431) finding an imminent and substantial endangerment to public health.

The EPA's Findings of Fact said that contaminants in two water wells are "likely" due to impacts from gas production and that Range operated the only production facilities near the wells. The order, however, did not contain a finding of fact that Range actually caused or contributed to the alleged contamination of the domestic water wells or to the alleged endangerment.

The EPA, however, still required several remediation steps of Range.

On December 8, 2010, the Texas Railroad Commission ("TRC") held a hearing to determine if Range was contaminating the water. The EPA refused to allow its personnel to testify or to produce documents and to participate in the TRC hearing to defend its order.

**January 18, 2011:** the EPA sued Range in Federal Court to enforce its order.

**March 7, 2011:** the TRC issued a proposal for decision (PFD) finding that Range's operations have not caused or contributed to the contamination of the domestic water wells.

**June 20, 2011:** the District Court stayed the case until the Fifth Circuit made a ruling on Range's Petition, which presents similar issues of fact and law.

Range's Petition in the Fifth Circuit argues: (1) the EPA order is not final agency action and that the EPA has the burden of proving the essential elements of a claim under the SDWA; (2) Range has the right to assert any applicable defenses and constitutional challenges; (3) the EPA's order is arbitrary and capricious because of insufficient evidence to support the finding that Range contaminated the water.

October 3, 2011: Fifth Circuit held oral argument (Judges Reavley, Elrod, and Graves).

June 2011: Landowners file suit against Range seeking $6.5 million for actual damages and mental anguish.

**July 14, 2011:** Range filed a $3 million counterclaim against the landowners (the Lypskys) and a third-party claim against Alisa Rich, the owner of a company called Wolf Eagle Environmental. Range claims that the Lypskys and Rich conspired to create misleading test results. Range's counterclaim includes deposition testimony from Mr. Lypsky admitting that gas was present in his drinking water years prior to Range's drilling.

### 3. Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d. 1 (Tex. 2008).

Holding: Rule of capture prevents royalty interest owners from recovering damages against well operator based upon trespass claim under Texas law.

The court, however, did not rule out the possibility of a breach of implied lease or breach of implied covenant to produce claim—only ruling that there was no evidence on the record to support such a finding.

The court did not make clear exactly what evidence would be required to make such a claim.

The Injection Well Act and Texas Administrative Code do not shield permit holders from civil tort liability resulting from actions governed by the permit. Under Texas law, merely owning a permit is not a shield from trespass claims, overturning a Court of Appeals opinion on this issue.

The court avoided the issue of whether subsurface wastewater migration can constitute a trespass and whether it did so in this case.

5. Northeast Natural Energy, LLC v. Morgantown (Monongalia County, West Virginia)

The City of Morgantown enacted an ordinance banning hydraulic fracturing within the City and anywhere within one mile of the City.

Northeast Natural Energy had previously received a permit from the West Virginia Department of Environmental Protection to drill and hydraulically fracture a Marcellus Shale well in an area within one mile of the city limits of Morgantown.

Northeast claimed that the City's ordinance was preempted by state law and therefore was unenforceable.

Northeast won summary judgment on August 12, 2011, based largely on preemption principles.

V. FUTURE LEGAL CONCERNS

A. Water Contamination/Pollution Claims.

Plaintiffs' attorneys have already made it clear that they intend to exploit the niche market of water pollution and contamination claims. This issue is closer to the forefront given the recent press regarding the documentary Gas Land.

As explained above, creating an established theory of causality between fracing operations and water pollution or contamination will be the key issue. As noted above, some of these cases will either be brought (or end up) in federal court, with detailed case law and jurisprudence being developed. A practitioner in this field would be wise to stay abreast of any such pending contamination or pollution cases.

B. Lease and Mineral Rights, Contract and Fraud Claims.

Despite the above questions regarding the viability of trespass claims relating to fracing operations, Texas and Oklahoma courts have not completely ruled out the possibility that improper fracing could lead to claims for breach of covenant damages.

Most of the existing shale gas lawsuits are traditional oil and gas lease disputes concerning cancellations, underpayments of royalties, and loss of drilling rights. With the proliferation of fracing operations in the Eagle-Ford shale play, more of these lease and mineral rights contract and fraud claims disputes are expected in both federal and state courts.

C. Personal Injury and Property Damage Claims from Operations.

As always, personal injury and property damage caused by fracing operations are always a concern for oil and gas companies. It goes without saying that straight negligence actions under most states' laws for personal injury and tangible property damages that result from negligent fracing operations will remain viable causes of action in the courts. As noted above, causality will be the key issue for property damage claims,
and plaintiffs’ attorneys will be tasked with establishing sufficient evidence to ensure survival of any recoveries on appeal.

D. Toxic Exposure Injury Claims.

Some states have not foreclosed the possibility of "stigma damage" cases where a group of plaintiffs claim a lump sum diminution in value to their real property based upon some alleged tortious conduct.

As with the theories of recovery presented above, causation of direct damages will be the key issue for plaintiffs' attorneys seeking to bring these suits. Prior to this, several cases concerning salt-dome natural gas leaks presented as class actions in the Midwest have been successful in recovering stigma damages – specifically when tied to direct property damages – in well-publicized lawsuits. It is plausible that those same plaintiffs' attorneys may attempt to bring a similar case as a result of alleged groundwater or surface contamination relating to fracing operations.

E. Contract and Business Tort Suits.

There will, of course, be disputes concerning oil and gas field service contracts in any major shale play operation. There will also be a number of construction contract disputes as the infrastructure is laid in any newly-developing shale gas play, as well as disputes concerning joint ventures, transportation, purchase and sale, and every other major type of contract relationship.

Likewise, business torts of all shapes and sizes should be expected and anticipated by any major oil and gas operator conducting fracing operations in the developing shale gas play.

F. Local Government Lawsuits and Ordinances.

As noted above, there is a vast array of continued political and legal efforts from environmental activists, and certain municipalities, to enact bans on fracing operations in developing shale gas areas.

For example, in the Barnett Shale alone, Titan Operating has sued the City of Flower Mound for the denial of a setback variance for one of its fracing operations. That case is currently being litigated.

VI. RECENT LEGISLATIVE ISSUES.

Congress and the EPA recently have suggested that federal oversight of hydraulic fracturing operations might be warranted, and they have proposed a number of ways to do so. The following is a short bullet point summary of recent and proposed legislation.

A. Federal Legislation:

The Proposed Fracturing Responsibility & Awareness of Chemicals or "FRAC" Act:

1. Regulation of hydraulic fracturing at a federal level.
2. Public disclosure of hydraulic fracturing chemical constituents (but not the proprietary chemical formulas) used in the fracturing process.
3. Medical emergency disclosure of proprietary product formulas, regardless of alleged trade secret.

The Clean Energy Jobs & Oil Accountability Act 2010:

Requires disclosure of chemical constituents similar to the disclosure required by the proposed FRAC Act.

Continued / Threatened EPA Action

The EPA is conducting a second study to determine if there is a relationship between hydraulic fracturing and drinking water contamination.
The new EPA study will include locations in the Haynesville and Marcellus shales, and the EPA will monitor the hydraulic fracturing process throughout the life cycle of a well.

Preliminary report expected by end of 2012; final report in 2014.

Expect large data collection efforts—by the EPA, states, and operators—on fracing fluid wastewater characteristics.

B. State Legislation:

**Colorado:** In 2008, the COGCC promulgated the amended rules to address impacts and concerns related to Colorado's unprecedented increase in permitting and oil and gas production.

**Wyoming:** WOGCC completed revisions to regulations in June 2010 that added requirements for chemical disclosure and restrictions on the use of diesel and other petroleum distillates.

**Arkansas:** AOGC adopted revised regulations for hydraulic fracturing, similar to Wyoming / Colorado.

**New York:** In 1992, the New York Department of Environmental Conservation ("NYSDEC") finalized a Generic Environmental Impact Statement ("GEIS") on an oil, gas and solution mining regulatory program.

NYSDEC is completing the process of supplementing its 1992 GEIS on the Oil, Gas and Solution Mining Regulatory Program to address issues relating to high-volume hydraulic fracturing and horizontal drilling techniques used in the Marcellus Shale, the Utica Shale and other deep low permeability natural gas reservoirs.

**Pennsylvania:** Legislators proposed a moratorium but the Pennsylvania Department of Environmental Protection's extensive revision of its oil and gas regulations during 2010 will likely deter the impetus for this proposed legislation.

Pittsburgh unilaterally declared a drilling/fractioning moratorium in and around the municipality.

**West Virginia:** Regulators conducted a comprehensive review of the state's oil and gas program to address issues related to increased oil and gas development in unconventional reservoirs in the state.