

EPA Science Advisory Board Meeting on Hydraulic Fracturing
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Oral Comments of the Sierra Club

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Thank you for the opportunity to speak with you today on behalf of the Sierra Club. Hydraulic fracturing may have the potential to open up substantial shale gas reserves, which are relatively cleaner than other fossil fuels, including coal and tar sands oil, but its track record thus far is poor. Because the shale gas boom is bringing hydraulic fracturing to many new areas, these comments focus on shale gas. We expect, however, that EPA's study will include other resources extracted with hydraulic fracturing technology, including coal bed methane.

State regulators and community groups have linked shale gas hydraulic fracturing operations to water contamination in many states, and reports of contamination are increasing. If natural gas is to play a role in our energy transition, as gas producers hope, it simply cannot continue to imperil drinking water supplies and the public in this way. We applaud EPA for undertaking a serious and wide-ranging study of these issues, which we view as an important step towards proper state and federal regulation of this industry. At the outset, though, we emphasize that strong regulation – at all levels – should ultimately be informed by this study, but must not be delayed by it. Shale gas drilling is going forward now, regardless of EPA's research. EPA and the states must, therefore, work to control extraction's impacts now, with the knowledge that this study may eventually warrant further rulemaking work.

We strongly support the general approach EPA outlines in its draft scoping materials. The life-cycle analysis EPA proposes is particularly important. Congress's charge to EPA to "carry out a study on the relationship between hydraulic fracturing and drinking water" is broad: this "relationship" necessarily encompasses the entire life-cycle of the fracking process, from the hydrogeology of the proposed well site to the treatment and management of produced water to the long-term effects of abandoned wells and the fluids left behind within them. That relationship is also properly considered at the landscape scale, as well as for individual wells, as watersheds experience the cumulative impacts of many wells, not individual projects. Written comments submitted by the Waterkeeper Alliance, the Clean Water Network, and NRDC outline ways to further deepen this focus; we generally join and support those comments.

This study also reflects an important opportunity to set things right, which I'll focus on in the remainder of these comments. In 2004, EPA released a study of hydraulic fracturing in the coal bed methane context which, though it cited many instances of contamination, nonetheless inexplicably concluded that there was no

“confirmed evidence” of contamination and that injection “poses little or no threat” to underground sources of drinking water. Industry has since relied on that study to insulate itself from criticism. Indeed, the study’s conclusions were used to secure an exemption for most hydraulic fracturing activities under the Safe Drinking Water Act. That study was, it has since become clear, terribly flawed. It ignored large classes of impacts, failed to conduct the detailed empirical analyses regulators needed, and treated industry assurances that all was well far too credulously. Indeed, independent journalism organization Pro Publica has since reported that industry representatives unduly influenced the 2004 study. Thanks, in part to that study’s inappropriately sunny conclusions, water contamination problems have continued to grow and the nation lost years during which it might have been bringing this boom under control. As the Board considers the proper scope of this new study, it can learn from where EPA’s previous work has gone astray. I will briefly outline a few points it should consider.

1. Look at hydraulic fracturing as it is actually done

The 2004 study gave considerable credence to the ability of state agencies to enforce their own rules and respond to complaints; it also relied heavily upon a 2003 Memorandum of Agreement in which several large companies agreed to cease using diesel fuel in some operations. Since then, it has become clear that most states simply lack the capacity to consistently enforce their rules, that many operators are causing serious contamination problems, and that Halliburton and BJ Services have used hundreds of thousands of gallons of diesel in their operations, as their representatives recently admitted to the House Energy & Commerce Committee. Clearly, EPA cannot responsibly rely solely on the text of rules and industry statements, but must look to the way fracking is practiced in the field.

In this regard, although the scoping plan for this study indicates that EPA plans to take a far more rigorous approach this time, background materials posted on the Board’s website by the Agency raise some troubling questions. In particular, one document, *Modern Shale Gas Development in the United States, A Primer*, is misleadingly sunny.

The *Primer* in many regards reads more like an industry lobbying document than a balanced study. It, for instance, describes “the many tools” of state regulators without noting that those regulators are often overwhelmed, and opines that state regulations “more effectively address” gas operations than the federal oversight that many in the gas industry want badly to avoid. It also describes the Safe Drinking Water Act as an important source of protection against fracking risks, even though the gas industry has successfully exempted itself from nearly all of the Act’s provisions. And it provides a misleading list of fracking fluid additives, suggesting that many appear in common foodstuffs and household goods, without acknowledging that many of these constituents are, in fact, quite dangerous – and without noting, for instance, that the petroleum distillates used by many companies have extraordinarily high levels of

carcinogenic benzene and similar hydrocarbons. That list appears to have been taken, nearly word for word, from a gas company's promotional materials. Neither EPA nor the Board should be relying upon industry public relations statements to inform this vital study.

EPA must, instead, consider the relationship between fracking and drinking water by looking at the messy, day-to-day practices of the industry and its regulators. It must acknowledge that many drillers skirt the rules, that accidents happen, and that states are over-stretched – and must accurately characterize the impacts of this difficult reality. Although the regulatory framework is obviously relevant, and EPA may wish to flag particularly successful or unsuccessful approaches, the rulebooks are not necessarily followed. We expect this study to look at fracking on the ground, using a combination of unannounced site visits, interviews with state regulators, incident reports, detailed empirical testing of produced and flowback water, drilling mud, and fracking fluid constituents, and monitoring and inspection of existing and abandoned wells to examine, for instance, the integrity of casing strings and wastewater management practices.

2. Do not artificially limit the scope of the study

The relationship between hydraulic fracturing and drinking water is broader than any one practice or area of statutory authority. Contamination risk occurs not just during the frack job itself but throughout the process. For instance, many recent incidents involve surface spills of fracking fluid and produced water, methane contamination due to migration from improperly cased wells, and pollutant discharges from plants treating well wastewater. If EPA does not take these incidents into account, it will fail to understand the problem. The 2004 study suffered badly from this myopia, acknowledging many incidents of this sort, but stating that they were “beyond the scope” of its consideration. Even if that were appropriate for the narrow 2004 study, ignoring such contamination vectors in this study because they do not necessarily occur as part of a discrete frack job would artificially blind EPA to important pieces of the “relationship between hydraulic fracturing and drinking water,” and frustrate Congress's purposes.

Similarly, EPA should recognize that the relationship between hydraulic fracturing and drinking water may extend to areas where federal environmental law does not presently reach, but which are nonetheless centrally important to the Agency's research agenda. For instance, many rural water systems might not be fully included within all the Safe Drinking Water Act's protections even were the gas industry's inappropriate exemption from that Act to be repealed. That does not mean that EPA should glance past those risks. In 2004, EPA dismissed impacts which were “outside the scope of the SDWA,” and so could have missed threats to rural well-users, among others. Again, even if that study's narrow focus on EPA's SDWA authority was appropriate or consistent with its design, it limited the study's scope and utility in

unhelpful ways. Congress's broad request this time makes clear that EPA should not go down that road again.

3. Give communities the benefit of the doubt

Many of the cumulative and long-term effects of hydraulic fracturing are fairly uncertain, due in part to the challenge of understanding complex hydrogeological relationships deep below ground. The sensible response to these uncertainties is to err on the side of public health and the environment by acknowledging data gaps while working to characterize and manage possible harm. Where it is difficult to link a given instance of contamination directly to a given well, for instance, EPA should not dismiss these incidents as "unsubstantiated," as it did in 2004, but should instead carefully consider the relative increase in the frequency and severity of water contamination incidents in gas drilling areas. EPA should use basic tools of statistical public health analysis to look for broad-scale links between water contamination and hydraulic fracturing, even where the mechanism of contamination in a particular instance may be unclear. EPA should, in other words, recognize the difference between uncertainty and ignorance and work to identify ways to manage and reduce risk. It is particularly important for EPA to apply this basically precautionary approach because some of the data gaps the Agency confronts are due to industry's refusal to share basic data, such as detailed fracking fluid composition information, and not to intrinsic empirical challenges. Industry cannot fairly refuse to be entirely candid with its information *and* argue that EPA does not have enough data to complete or substantiate the Agency's analyses.

4. Pay careful attention to regional differences

The impacts of hydraulic fracturing will vary regionally, as varying formations require varying techniques and different ecosystems and communities respond differently to the fracking process. The 2004 study acknowledged these regional differences through a brief survey of relevant basins, but did not reach useful conclusions because it did not connect regional distinctions either to different risk levels or pollution control techniques. These distinctions are crucially important. Shale gas extraction may pose quite different risks in the humid northeast than it does in the arid west, for instance.

We expect this study to carefully consider regional differences relating both to public health exposure and drilling techniques and to underlying hydrogeology. EPA should, in particular, conduct careful baseline studies in each relevant region so that it can identify changes caused by hydraulic fracturing. Without such a controlled baseline, EPA will struggle to reliably identify damage caused by the fracking process, and to identify ways to prevent damage.

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Put simply, the nation cannot afford to make mistakes on hydraulic fracturing and the shale gas boom. Shale gas sits at the intersection of the climate change debate and centrally important water quality and public health challenges. EPA's failure in 2004 to properly characterize those risks contributed to today's inadequately controlled shale gas boom. We are encouraged that EPA's draft study plan appears to move in a far more thoughtful and appropriate direction. As EPA and the states work to put appropriate rules in place at last, the Sierra Club urges the Agency and this Board to maintain this rigorous approach and support the detailed analysis that these ongoing rulemaking efforts require.