

**Book Review: Tom Wilber, *Under the Surface: Fracking, Fortunes, and the Fate of the Marcellus Shale* (Ithaca and New York: Cornell University Press, 2012).**

*In the discussions surrounding fracking, Pennsylvania certainly has been central. One of the first areas to experience a rush from the shale gas industry, the state offers a cautionary note to what happens to people and the environment when things move too quickly. This book tells us what exactly happened.*

Those interested in learning more about fracking and its impact would be well advised to read this book. This is a solid, meticulously researched study published by a prestigious university press, written by a journalist who has had a long professional career not only in journalism but also in teaching the subject at the college and university level. Based on an extensive array of interviews, government reports, academic case studies, newspaper articles, Wilber's book examines the rush to develop shale gas extraction through fracking in the state of Pennsylvania, and then New York State, over the past several years.

The book focuses mainly on Pennsylvania, when the impact of fracking was not well known by the broader population. Here, Wilber takes us through the process by which companies obtained leasing rights from landowners, then the enormous speculation on the amount of gas reserves, which triggered a "gas rush" among companies; then arose the problems (especially in Dimock, Pennsylvania), the rise of popular anti-fracking activism, and then the resistance in nearby New York State to another gas rush. Wilber's book is very accessible to a general reader in that he is adept at explaining the complicated issues and industrial components involved in fracking. Moreover, he adds a very human dimension to the investigation by incorporating the stories of families who have been adversely affected by fracking in their areas and even how fracking has divided communities. The fascinating mini-biographies of the activists and company executives also make for an engaging book. Likewise, the book offers an interesting slice of American history, as the country struggles to find new economic initiatives in a somewhat post-industrial landscape, to attain independence from foreign oil in the aftermath of 9/11, and to navigate the dilemmas involved in extracting previously unrecoverable fossil fuels now that most of the world's more accessible reserves have dwindled. That historical context and brutal economic necessity can help explain why fracking is attractive to so many people.

Wilber is a balanced and objective writer. He gives voice to both sides of the debate; hence, the book's prologue begins with an outdoor interview with Terry Engelder, fracking proponent and professor of geosciences at Pennsylvania State University, followed by the contrary opinion of Tony Ingraffea, the engineering professor at Cornell University who had

developed hydraulic fracking technology but came to view it as quite risky and problematic. Wilber interviewed people from across the spectrum, from landowners to company representatives, to farmers, geologists, engineers, politicians, mayors, and activists. Overall, the author wants his readers to arrive at their own conclusions.

Even though Wilber does not definitively state a position for or against gas-fracking, the evidence that he weighs inclines one to the conclusion that much has gone awry in Pennsylvania due to fracking, as companies rushed in and governments and residents did not have adequate time to become fully informed or to regulate and monitor this new industry. Instances have been reported where dangerous levels of methane gas migrated upwards from the targeted shale gas formation through cracked cement casings into private aquifers. In this state, the industry still struggles with how to properly dispose of their fracking fluids and wastewater, which can contain radioactive materials; municipal sewage systems generally are unable to handle such chemicals.

There have been accidents and violations. The most well-documented example is that of the town of Dimock, where 60 water wells have been contaminated. Elsewhere, in the first half of 2010, environmental regulators inspected 1,700 sites and found 530 violations: spills, leaks, faulty containment pits and so on. Looking outside the state, a Democrat congressman found 300 records between the years 2003 and 2008 in Colorado documenting water contamination due to fracking, more than 700 in New Mexico. There have been too many such instances to simply disregard them as relatively rare mishaps or anomalies.

Some company practices do little to inspire public confidence. Instances have been reported where company representatives (called "landmen") used pressure tactics and misinformation to obtain leasing rights from landowners. Other company representatives stated that the chemicals found in fracking fluids are the same as those found in personal care products. Likewise, the industry argues that shale gas offers a cleaner alternative to coal or other fossil fuels. Their argument is well received among people who strongly believe that North America should become more energy independent. On the other side of the argument, the extensive release of uncaptured methane gas from the fracking rigs contributes significantly to climate change.

In terms of company practices and approaches, Cabot Oil and Gas is in the spotlight here. It was proven that the water contamination in Dimock was caused by Cabot fracking operations, but they did everything in their power to deny full responsibility for the complaints, disparaging those who made them. Obtaining full redress has been difficult (a fact that incidentally conveys the necessity of obtaining good baseline data prior to fracking operations so that disputes like these can be resolved more easily). Also, Wilber has documented industry-

wide stances, in one instance the opposition to further regulation.

That raises the question: could better and more extensive regulation make fracking viable? Wilber has discovered much hesitancy to fracking in New York State, notably due to the potential threats to water supplies, “The known and unknown impacts associated with drilling simply cannot be justified” (Acting NYC Dept. of Environmental Protection Commissioner Steven Lawitts). Moreover, there are too few regulators, too few inspectors who simply cannot keep pace with the enormous shale-gas development. And, constrained state budgets have reduced funding for environmental protection. New York’s Department of Environmental Protection lost 23% of their staff.

If fracking poses risks to public health and the environment, what are benefits of this industrial process? Some of the landowners did gain from the royalty payments from the shale-gas extraction that has been taking place on their lands. For a farming family that is struggling to make ends meet, the temptation to lease the land is understandable. The fracking boom has brought some welding and construction jobs in its train, although such employment is largely temporary, available mostly during the construction phase. Still, in the larger scheme of things and thinking of the long-term cumulative impact of fracking, in Pennsylvania and elsewhere, such economic benefits may prove to be quite minimal when compared with the far greater impact on public health and the environment.

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