On behalf of our nearly 14,000 members in the State of Michigan, the Natural Resources Defense Council advocates for cleaner, safer, more affordable and reliable energy through the greater use of renewable energy and energy efficiency.

Thank you for the opportunity to comment on the report at the draft stage. We welcome the chance to engage in this conversation and would like to provide comments on the natural gas infrastructure section.

The report calls hydraulic fracturing necessary for affordably accessing natural gas, yet the serious risks Michigan's people and environment could face because of it are wholly absent. The only reference to its potential issues is a single sentence: "Many oral and written comments and concerns regarding the safety and environmental impact of hydraulic fracturing were received in this process." These comments and concerns are not outlined in the report, but should be. Instead, the report proceeds by making the assertion that Michigan producers have been using hydraulic fracturing since the 1950s and continue to do so today. What this claim fails to acknowledge is that today's industry practices employ new chemicals and techniques and are of a higher intensity and scale than ever before.

We urge you to include in the final report a discussion on the possible risks posed by hydraulic fracturing. Areas of particular interest include the chemical additives in fracturing fluid, the effects on water resource quality, and the effectiveness of the Water Withdrawal Assessment Tool (WWAT). Please note that the following issues are all areas cited in the Michigan-specific technical reports done by the Graham Sustainability Institute.

Chemical additives in fracturing fluid

Fracturing fluid contains chemical additives that if not dealt with appropriately can contaminate surface and groundwater. Numerous additives have yet to be disclosed, but some have already been revealed as toxic. And, while additives only make up approximately 0.5 % of the total fracturing fluid, hydraulic fracturing's water-intensive nature translates into at least 13,000 gallons of chemicals being used for the typical 2.6 million gallon hydraulic fracturing project.[1] Ideally, all of the chemicals should be disclosed to the public prior to drilling.

The effects on water resource quality

These chemical additives pose a real risk to water resource quality. Assessments done in Arkansas revealed that a combination of spills, illegal discharges, and the erosion of sites contributed to violations of surface water quality.[2] Most research has been focused on the contamination of ground and drinking water, but more should also be directed toward concerns related to surface water and terrestrial ecosystems. In an effort to try to minimize these risks, regulatory options could include requiring using grey water where possible, using maximum capture and reuse of flowback water, having baseline water quality testing, and using tracer chemicals.

Effectiveness of the Water Withdrawal Assessment Tool (WWAT)

Currently Michigan employs an instrument called the Water Withdrawal Assessment Tool to evaluate the potential impacts from water withdrawals for fracturing operations, with an emphasis on impacts to surface water flow and fish populations. Where the tool comes into question is in its ability to address short-term intensive withdrawals, such as those associated with hydraulic fracturing, and gauge the potential impacts of establishing the infrastructure and operations on habitat, wildlife, and nearby waters receiving site runoff.[3] Additionally, the Michigan Department of Environmental Quality applies the water withdrawal assessment to high volume horizontal hydraulic fracturing under a Supervisor of Wells guidance document, rather than explicit regulatory requirements. To better understand and protect against hydraulic fracturing's impacts on water resources, we need an approach to assessing water withdrawal impacts that takes into account impacts to wetlands, shallow streams and other water-related values from high volume periodic water withdrawals, and MDEQ should adopt this approach into its rules.

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[1] Burton, G. Allen. And Knute J. Nadelhoffer (2013), Hydraulic Fracturing in the State of Michigan: Environment/Technology Report, Graham Sustainability Institute at the University of Michigan, online: http://graham.umich.edu/media/files/HF-04-Environment-Ecology.pdf

[2] Burton, G. Allen. And Knute J. Nadelhoffer (2013), Hydraulic Fracturing in the State of Michigan: Environment/Technology Report, Graham Sustainability Institute at the University of Michigan, online: http://graham.umich.edu/media/files/HF-04-Environment-Ecology.pdf

[3] Burton, G. Allen. And Knute J. Nadelhoffer (2013), Hydraulic Fracturing in the State of Michigan: Environment/Technology Report, Graham Sustainability Institute at the University of Michigan, online: http://graham.umich.edu/media/files/HF-04-Environment-Ecology.pdf