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Organization:

Title:

Comments: Packet #13 : published 8-28-18: "The Human Right to Water and Unconventional Energy" on water consumption, contamination, and waste production in Appalachian Ohio

Please acknowledge receipt.

The attached new peer-reviewed research's data on water consumption and waste production projections in eastern and Appalachian Ohio, including the Muskingum River watershed, as well as the study's review of water contamination and wider conclusions on water rights and their implications for Ohio and the region, must be fully assessed in relation to fracking if fracking is going to be considered as a potential action in the new Wayne Plan.

Robert C. Palmer, Damien Short, and Walter E. Ted Auch,

The Human Right to Water and Unconventional Energy,

Int. J. Environ. Res. Public Health 2018, 15, 1858;

<http://www.mdpi.com/1660-4601/15/9/1858/htm>. Published Aug. 28, 2018

For example (see p. 18, ff of attached pdf): "Traditionally, Appalachian West Virginia and Ohio laterals require 970-1080 GPLF with demand growing at a rate of 11-22% per year (Figure 5). As an example of how much liquid-and potentially radioactive-waste is produced, we estimate that 11-12% of the freshwater used in the fracking process comes back to the surface as "brine" and must be disposed of in Class II Salt Water Disposal Injection Wells. Put another way an 85-million-gallon lateral would likely produce 9.8 million gallons of liquid waste, which is equivalent to the total amount of water in 15 Olympic sized swimming pools."

and (p. 23 of pdf): "Such data highlights a crucial problem, there is no supply-side price signal demanding the UOGD industry reduce or stabilize their water demand per unit of energy produced. An additional issue concerns anecdotal evidence pointing towards the UOGD industry relying on highly fragile and ecologically critical 1st- and 2nd-order streams and reservoirs throughout Appalachia, when their demand cannot be met by documented water withdrawals agreements with conservancy districts (Figure 9). At the present time, research points to a 22-25% gap in our understanding of where this industry's water demand is coming from; thus, leaving frontline communities and policy makers in the dark regarding how this known 'unknown' environmental externality will manifest in the coming years and decades."

This issue must be assessed by the Wayne in evaluating potential impacts on communities surrounding the Wayne if the Wayne seeks to include fracking as an activity in the new Plan.

and (p. 23): "Resource demand in the UOGD industry is directly related to the global price of oil and gas, with water demand increasing exponentially as the price of oil and gas declines. This forces the industry to rely on resources known to generate a disproportionate return-on-investment (ROI) relative to the price paid for the resources. As an example, the water demand inflection points we have documented in the Marcellus and Utica plays of southern Appalachia happened to coincide with a 50% decline in the global price of Brent crude and West Texas intermediate oil between Q1-2014 and the end of 2016."

These fluctuations must be accounted for and their potential impacts on Ohio communities and the Ohio River watershed, including downstream water consumers, must be assessed if fracking is to be a potential activity of

the Wayne in the new Plan.

Water contamination risks, also reviewed in this paper, must also be quantified and costs to communities and downstream water consumers assessed. For example, the Ingraffea et al (2014) report on casing failure rates and water contamination in Pennsylvania revealed "Statewide data show a sixfold higher incidence of cement and/or casing issues for shale gas wells relative to conventional wells." Ingraffea paper attached and at

Proc Natl Acad Sci U S A. 2014 Jul 29; 111(30): 10955-10960.

Published online 2014 Jun 30. doi: 10.1073/pnas.1323422111

Potential costs to communities and downstream water users of Wayne's apparent interest in allowing fracking under the new Plan must be fully assessed in relation to all of the issues raised in these papers.

We look forward to seeing your thorough evaluation of the attached and of all the data and references therein.

Sincerely,

Heather Cantino, Steering Committee Chair,

Athens County Fracking Action Network, acfanohio@gmail.com

on behalf of ACFAN, acfan.org, acfanohio@gmail.com

Buckeye Environmental Network (formerly Buckeye Forest Council), Roxanne Groff, board chair

Jean Andrews, Documentary Video Producer, "A Forest Returns: The Success Story of Ohio's Only National Forest as Told by Ora Anderson"

Concerned Citizens of New Concord Muskingum County, OH 43762

Meghan Wynne, Organizer