Data Submitted (UTC 11): 8/30/2018 4:00:00 AM First name: Heather Last name: Cantino Organization: Title: Comments: Packet #28: Fwd: Webb et al.,(2014) lit review of dev and reprod effects of uog chemicals

All of the data referenced here (attached) must be assessed and all public health costs quantified and accounted for in your analysis of fracking impacts on SE Ohio and the Ohio River watershed, including all downstream drinking water consumers.

----- Forwarded message ------

From: Heather Cantino

Date: Thu, Dec 8, 2016 at 9:47 PM

Subject: Webb et al., 2014

To: Kathleen Atkinson, "Henry, Judi -FS"

attached.

Ellen Webb et al., Developmental and reproductive effects of chemicals associated with unconventional oil and natural gas operations, Rev Environ Health 2014; 29(4): 307-318.

Abstract: Unconventional oil and gas (UOG) operations have the potential to increase air and water pollution in communities located near UOG operations. Every stage of UOG operation from well construction to extraction, operations, transportation, and distribution can lead to air and water contamination. Hundreds of chemicals are associated with the process of unconventional oil and natural gas production. In this work, we review the scientific literature providing evidence that adult and early life exposure to chemicals associated with UOG operations can result in adverse reproductive health and developmental effects in humans. Volatile organic compounds (VOCs) [including benzene, toluene, ethyl benzene, and xylene (BTEX) and formaldehyde] and heavy metals (including arsenic, cadmium and lead) are just a few of the known contributors to reduced air and water quality that pose a threat to human developmental and reproductive health. The developing fetus is particularly sensitive to environmental factors, which include air and water pollution. Research shows that there are critical windows of vulnerability during prenatal and early postnatal development, during which chemical exposures can cause potentially permanent damage to the growing embryo and fetus. Many of the air and water pollutants found near UOG operation sites are recognized as being developmental and reproductive toxicants; therefore there is a compelling need to increase our knowledge of the potential health consequences for adults, infants, and children from these chemicals through rapid and thorough health research investigation.

Sincerely,

Heather Cantino, Steering Committee Chair,

Athens County Fracking Action Network, acfanohio@gmail.com

on behalf of Athens County Fracking Action Network,

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