Risks to School Children

SOUTHWEST PENNSYLVANIA ENVIRONMENTAL HEALTH PROJECT

Potential Risks Produced by Shale Gas Development Near Your School

Shale gas air, water and soil contamination

Children in schools near unconventional natural gas development (UNGD) sites may be subjected to air pollutants. There are emissions released at every stage of shale gas development. Contaminants pass through – and are released from – well pipes, condensate tanks, compressor and metering stations, and processing plants. There are planned emissions, leaks and accidents. Contaminated air and water contain potentially dangerous chemicals and particulates. Contamination from UNGD liquids is a concern if there is a contaminated pond or stream on the school grounds or if fluid reaches soil in a playground or ball field. ***Children at school may also be put at risk if there is a fire or other accident at a nearby site.*** This raises concerns about whether local first responders have the resources to contain a fire or explosion adequately; and whether they can evacuate the children safely.

Schools and exposures

There are nearly 7 hours in a school day and about 180 school days per year. This is a lot of time for exposures.

• By May 2013, in Pennsylvania, there were 147 schools and 171 day care centers within one mile of a permitted well site. The closest well sites were less than 1,000 feet.

With significant exposures children can have symptoms such as headaches, nausea, rashes, tingling or numbness in hands or feet, asthma incidents, nosebleeds, and eye, nose, and throat irritation. If symptoms seem unusual or last for longer than you would expect, it is a good idea to let your school nurse, principal, and doctor know. They may be from shale gas activity exposures.

• Children may be exposed to contaminants while outside for recess or gym class.

• Even inside there may be exposures from nearby UNGD facilities. Outdoor air pollutants enter school buildings through open doors, open windows, ventilation systems, and cracks in structures. Once inside these chemicals or particles can be trapped for a period of time.

• When people enter buildings, they can inadvertently bring in soil and dust on their shoes and clothes along with pollutants that attach to those particles.

Potential for health effects

• In the 2011-12 school year, 12% of Pennsylvania students had a diagnosis of asthma. These children are at risk for increased acute asthma events.

continued on other side

• Children have higher respiratory rates and as a result, children exposed to air contaminants breathe in more toxics per pound of body weight than adults.

• Children accumulate more toxins in their bodies than adults. Their bodies are still maturing and they cannot metabolize some toxicants as well as adults. They don't detoxify as efficiently.

• Children spend more time engaged in vigorous activity outside.

• Children's brains are still developing. Many toxic agents are known to interfere with developmental processes within the brain.

What parents and school officials need to ask

• What – exactly – are the emissions from the nearby site? If the site is not yet completed, what are the expected emissions at each stage of development? A great deal of diesel exhaust, for instance, can be produced when a site is under construction.

• If not yet constructed, what kinds of controls can be put into place to limit emissions? There is a move in some areas toward green completions. Is there a reason why every reasonable safety mechanism would not be used?

• Can the worst of the emissions (flaring at a well head or blowdowns at compressor stations) occur when school is not in session? Perhaps on weekends, after school hours, or early evening, but well before children arrive in the morning.

• What kind of warning system can be put into place for unexpected high releases?

• Will there be days when the air will be so contaminated that the school will have to close early or be cancelled?

From the Pennsylvania Department of Health's
Indoor Air Quality Guidelines for Pennsylvania Schools

"Most people are aware that outdoor air pollution can damage their health but many do not know that indoor air pollution can also have significant health effects. EPA studies of human exposure to air pollutants indicate that indoor levels of pollutants may be 2-5 times, and occasionally 100 times, higher than outdoor levels." "Good indoor air quality in schools is an important component of a healthy indoor environment. It contributes to a favorable learning environment for students, productivity for teachers and staff, and a sense of comfort, health, and well-being."

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For additional information please contact the

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2001 Waterdam Plaza Drive, #201, McMurray, PA 15317 • 724.260.5504
www.environmentalhealthproject.org • info@environmentalhealthproject.org