

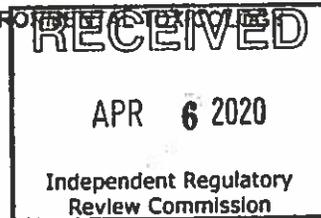
# 3251



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**CEET**

CENTER OF EXCELLENCE IN ENVIRONMENTAL HEALTH SCIENCE



April 6, 2020

Dear PA Environmental Quality Board,

The Center of Excellence in Environmental Toxicology (CEET) is the University of Pennsylvania's P30 Environmental Health Science Core Center (EHSCC) funded by the National Institute of Environmental Health Science (NIEHS). It is the only EHSCC in US EPA Region III. The environmental health researchers, physicians and public health professionals of the CEET work every day on environmental health issues and recognize the value of quality scientific discovery to the establishment and maintenance of good public policy.

We are pleased to comment on the PA Environmental Quality Board (EQB) proposed changes to current regulations that implement the PA Land Recycling & Environmental Remediation Standards Act, commonly referred to as ACT 2. The changes include revisions to the medium-specific concentrations (MSCs) that are found in several exposure pathways that potentially have adverse human health impacts. Act 2 requires that MSCs be updated every three years to ensure that concentrations of contaminants in soil and groundwater are determined to be protective of public health. We wish to comment on the EQB's decision to address the issue of polyfluoroalkyl substances (PFAS) and lead contamination.

### PFAS

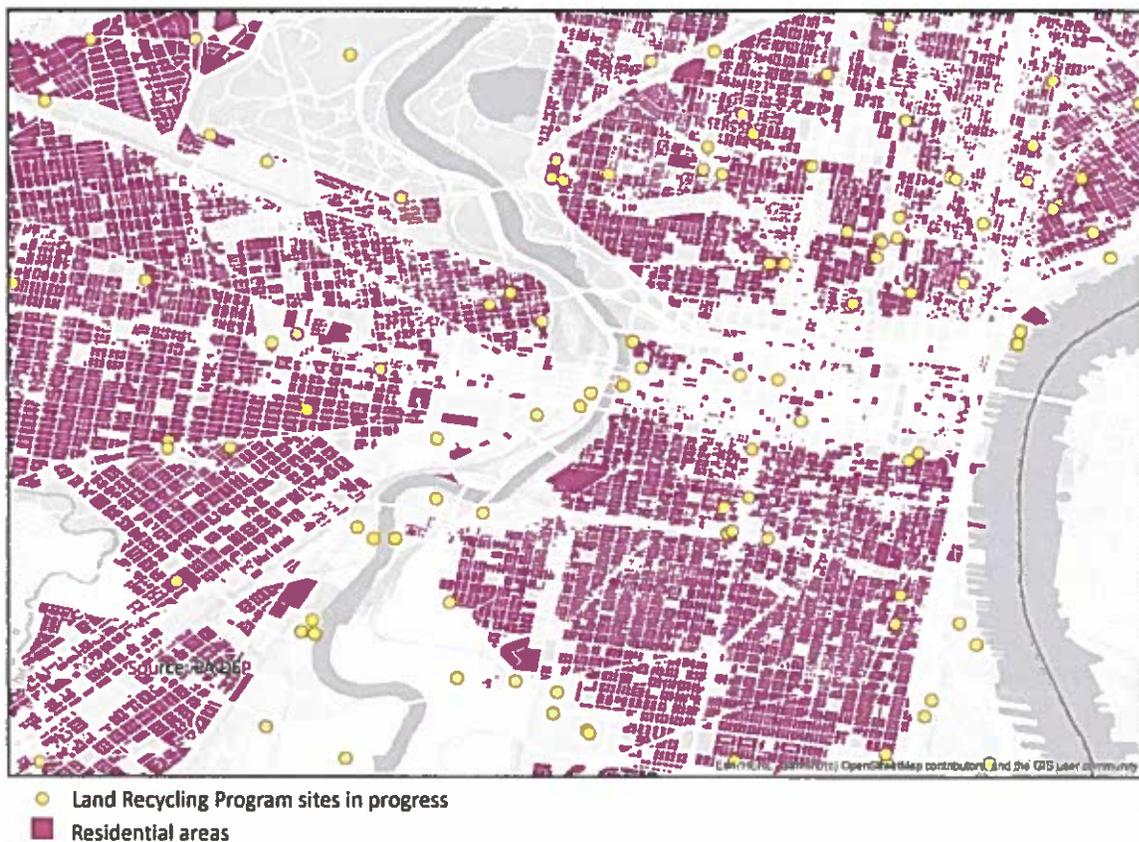
We wish to applaud the EQB's addition of soil and groundwater numeric values for PFAS, including perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), perfluorobutane sulfonate (PFBS). Even though these contaminants are generally classified as emerging risks, current research strongly suggest that a broad variety of adverse health outcomes and possibly cancer may be linked to exposures from several pathways (Alexander et al. 2003; IARC 2017, Steenland et al. 2012). PFAS have the potential to be a health concern because they persist in the environment and in the human body for long periods of time (3M 2000; OECD 2002, 2007; Prevedouros et al. 2006; Schultz et al. 2003). Studies have repeatedly shown that higher blood levels have been found in community residents where local water supplies have been contaminated by these chemicals (ATSDR 2008; Emmett et al. 2006; Shin et al. 2011; Steenland et al. 2009). We consider inclusion of this class of compounds in ACT 2 criteria as an important first step forward, but strongly suggest that only through the development and implementation of Maximum Contaminant Limits consistent with the SDWA's MCL/MCLGs standards can the public be provided with a comprehensive risk reduction strategy.

## Lead (Pb)

We are encouraged that the lead standard in soil for residential property has been reduced from 500 PPM to 420 PPM.

However, we have great concern regarding the increase in the acceptable non-residential lead (Pb) standard in soil from 1000 PPM to 2500 PPM. This seems to be opposite to the national trend to lower Pb soil standards for both residential and non-residential property. Our neighboring states of NY and NJ have recommended standards in the 400/800-PPM range for both residential and non-residential types of soil. The revisions proposed by EQB utilizes an Integrated Exposure Uptake Biokinetic (IEUBK) model, which emphasizes children's exposure for Pb (CASRN 7439-92-1) for residential properties and the Adult Lead Methodology (ALM), which does not consider a child's metrics, to calculate MSCs for nonresidential sites. These calculations assume that soil from Act 2 sites is not mobile. Multiple studies have shown that lead in soil is blown and tracked off site onto roads, sidewalks and then into yards and homes where children play (Clark et al. 2004, Rabito et al. 2012). The sites often evaluated and remediated under Act 2 are frequently in the middle of neighborhoods just steps from residential yards and parks where children regularly play (Fig 1).

Figure 1: Land Recycling Program Sites in Progress in Relation to Residentially Zoned Parcels in Philadelphia



In addition, many of these sites do not have restricted access and children may find them particularly attractive playgrounds. Children's blood lead levels have been associated with soil lead levels (Zahran et al. 2013, Mielke, 2019). PA post-industrial cities, the location of many Act 2 sites have multiple sources of lead that are currently overburdening children. All sources of lead should be included in any recommendation to increase exposure from non-residential sites. Most PA cities have lead service lines, a large number of housing units that contain lead paint and widespread poverty that increases the likelihood of lead paint in disrepair. These factors increase our cumulative exposure to lead. Our human bodies do not distinguish the source of lead to which we are exposed which then accumulates in our bones. Five decades of data have proven that for a neurotoxin, such as Pb, children are not adults and suffer disproportionately adverse health impacts due to their developing brains and nervous systems, and this is especially true for children in the 0-6 yo bracket. By raising the amount of Pb permissible in non-residential sites we are increasing the cumulative impact of lead on the most vulnerable.

We should consider the mobility of soil, the mobility of children, the likelihood of worsening poverty in the Commonwealth in the face of job loss due to COVID-19 and the serious health consequences of exposure to even small amounts of lead. All models of Pb exposure should be based strictly on uptake values for young children. PA has a poor history of combatting childhood lead poisoning. The average blood lead level in US children is less than 1 ug/dl (CDC). The most recent CDC lead surveillance report ranks PA as having the highest percentage of children with elevated blood lead levels (EBLLs) in the country. 5.2% of PA children tested have an EBL of 5mcg/dL or above. This is likely a gross underestimate recognizing that only 18% of children are tested. In Philadelphia's River Wards section, gentrification has turned non-residential property, often laden with lead from abandoned industry, into prime real estate for residential and non-residential purposes. Gentrification has been complicated by persistent accusations from the public that Pb risks have increased significantly during the transition of property from non-residential to residential use.

Our CEET research has found elevated lead levels surrounding Act 2 properties presumably through off-site migration. The proposed revisions to ACT 2 have the potential to affect both current and future generations of children that live in transitioning neighborhoods. Recognizing that the CDC has said that there is no safe level of lead exposure, the following states have lowered residential standards for Pb in soil to the following values:

- ♦ **California**        **80 ppm**
  
- ♦ **Minnesota**      **100 ppm**
  
- ♦ **Washington**     **250 ppm**
  
- ♦ **Wisconsin**       **250 ppm**
  
- ♦ **Massachusetts** **300 ppm**
  
- ♦ **Maine**             **300 ppm**

Other states are following this trend, and have introduced similar legislation to lower risks for young children.

We understand the economic rationale for proposing these changes. As the EQB states, “The cost related to a given site remediation depends in large part on which regulated substances are being remediated and what the specific soil and groundwater conditions are at the site. The proposed changes are not expected to add any significant costs, overall, to the cleanup of contaminated sites under this rulemaking.” However, we also recognize that children’s exposure to lead has the potential to yield permanent brain damage that produces lifelong behavioral, social, and economic impacts to the individual as well as the community and society as a whole.

The recommendation to increase Pb soil levels in non-residential sites is also an environmental justice issue. Act 2 sites are often found in low income minority communities that are already over-burdened by lead and other toxicants. Increasing the potential exposure to residents in these communities to additional toxicants is unfair and not in keeping with the Commonwealth’s law requiring that all Pennsylvanian’s have access to a healthy environment. We encourage the EQB and the PA DEP to follow the lead of many other states by comprehensively lowering Pb in soil standards and promoting statewide improved lead reduction strategies. Should you have additional questions we would be pleased to answer them.

Sincerely,



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