Sayers, Margery

From: James Nickel <james.nickel55@gmail.com>
Sent: Thursday, September 28, 2017 8:53 AM
To: CouncilMail
Subject: CB60 Testimony by the ILRS re: Aspergillus

I don't know if you were as shocked as I was that the wood waste recycling industry finds no health problems with wood waste recycling. Very reminiscent of the tobacco industry finding flaws with all the studies the indicated smoking causes cancer.

I'll keep this email to a single point of disagreement. There are more, but let's keep it simple.

ILRS says in their testimony:

> "All licensed operators in Maryland are taught about aspergillus and best management practices. Studies show that the spores travel no farther than 800 feet or so downwind from their source"

No citation for any of those studies, which forced me to do a little researching. I find this.

> **From the International Conference on Advancements of Medicine and Health Care through Technology**
>
> 23-26 September, 2009
> Cluj-Napoca, Romania.
>
> Page 2: "Several environmental pathogens have life-cycle forms that are similar in size to droplet nuclei and may exhibit similar behavior in the air. The spores of *Aspergillus fumigatus* have a diameter of 2-3.5 μm, with a settling philosophy estimated at 0.03 cm/sec (or about 1 meter/hour) in still air. With this enhanced buoyancy, the spores, which resist desiccation, **can remain airborne indefinitely in air currents and travel far from their source.**"

That bolded section clearly implies a distance far in excess of 800 feet. The Director of DPZ noted in his testimony at the working session that DPZ does not make recommendations on health issues. He calls those "political decisions" to be made by the County Council. That suggests the County Executive has differed to the County Council in health matters as well. I find that disappointing.

CB60-2017 should be voted down and CB20-2014 remain in effect. For future consideration in M1/M2 there is health risk. I don't live adjacent to an M1/M2 area, but I care about those that do.

Please include this email as additional testimony for CB60-2017.

Regards,

James Nickel
Dayton, MD

Sayers, Margery

From: Ralph VanWey <rwvanwey@gmail.com>
Sent: Monday, September 25, 2017 10:27 AM
To: Kittleman, Allan; CouncilMail
Subject: Do Not Pass CB60

Dear Council Member,

We are angry and stressed that you have allowed Mr. Bonner
to operate an illegal mulching/composting facility and have done nothing to stop him. For years, we have been subjected to carsogenic toxins that cause cancer and we are not happy about it. We oppose CB60 for its cancer producing toxins and do not feel that industrial/mulching can be done safely in terms of toxins and fire threats. Maryland has 12+ years of
draught. Draughts and fire are a deadly mix and human error happens too many times.

Do not pass bill CB60 in any format.

Ralph and Wilma VanWey

Sayers, Margery

From: David Smith <dosmith99@gmail.com>
Sent: Monday, September 25, 2017 8:52 AM
To: CouncilMail
Subject: Re: CB-60 -- Need to understand amendments and processes

Good morning Council Members,

It has been 12 days and still no response. Below is copied and pasted from the original email.

I understand that amendments to CB-60 are currently being discussed. There are few questions that I'd like answered in regards to these amendments:

1, When will the amendments be finalized so the public can review?
2, Will there be another public hearing to discuss the amendments?
3, Why was there 2 public hearings discussing CB-60 when the council and the DPZ director knew of amendments being discussed?

I currently opposed CB-60 unless there are major amendments and need to understand these amendments and would like to provide testimony based on the changes. We are counting on the County Council to course correct with amendments added to CB60 to clearly prevent any chance of industrial mulch facilities from operating throughout farmland in Howard County, other than in M1/M2 commercially zoned land. This is the only way our Council members will ensure everyone in potentially affected areas continues to be protected by current zoning regulations defined in CB20. Please take this matter seriously and add needed amendments to CB60 that we feel is unacceptable as it now stands.

Regards,
David

Dayton, MD Resident

On Wed, Sep 13, 2017 at 10:49 AM, David Smith <dosmith99@gmail.com> wrote:

> Good morning Council Members,
>
> I understand that amendments to CB-60 are currently being discussed. There are few questions that I'd like answered in regards to these amendments:
>
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>
> Regards,
> David

Dayton, MD Resident

Sayers, Margery

From: Victor Velculescu <velculescu@jhmi.edu>
Sent: Saturday, September 23, 2017 2:00 PM
To: CouncilMail; Kittleman, Allan
Cc: Feldmark, Jessica
Subject: Health risks of CB60
Attachments: Mulch Factory Health Effects Velculescu 121414.pdf; Velculescu Howard County Council Testimony September 11, 2017.pdf

Dear Members of the County Council and County Executive Kittleman,

Thank you for the opportunity to present to the County Council on September 11. As I mentioned at the time, I remain gravely concerned about the health effects of industrial-scale mulching and food-waste composting on residential, farming, agricultural, and conservation areas in Howard County. Please find attached to this email my testimony from that evening as well as a presentation I previously prepared on this topic.

As there were questions at the County Council Meeting related to my testimony, I would like to clarify a few issues.

It was apparent that some members of the Council do not fully appreciate the health risks of substances resulting from large-scale industrial mulching and composting, despite the numerous studies in the medical literature (a non-exhaustive list is contained in the attached presentation). The agents for these health risks include infectious organisms, toxins, and cancer-causing substances from the materials and compounds generated by mulching and composting sites. The literature points to serious health risks associated with all of these substances, including infections, renal, hematological, neurological and liver damage, dermatologic effects, allergic respiratory effects, non-allergic respiratory effects, gastrointestinal disturbances, fevers, irritation of the eyes, as well as cancer.

In particular, a question was raised whether the references related to occupational health exposure to wood dust were relevant, since wood dust in that setting may be different from wood dust generated from industrial mulching. One of the fundamental principles of cancer research is the realization that specific underlying substances promote the formation of cancer , or are "carcinogenic," regardless of the route of exposure. In many cases individuals that directly work with materials that are carcinogenic or toxic serve as the "canary in the coal mine," but this does not mean that these are the only individuals at risk. For example, the dangers of asbestos were first identified in asbestos mining towns in the early 1900s. Now, many years later, we realize that asbestos found in buildings and other sites is a major risk factor for lung cancer, mesothelioma and other lung diseases. Consequently, this material has been heavily restricted or phased out throughout the world. Similarly, tobacco smoke was first determined to lead to lung cancer in smokers, and only subsequently was there a realization that secondhand smoke is also major health hazard. Now, cigarette smoking is banned in many public buildings and hospitals. Beside asbestos and tobacco smoke, wood dust is another substance that has been classified as a Group 1 "known human carcinogens" by the World Health Organization and as indicated by the American Cancer Society (https://www.cancer.org/cancer/cancer-causes/general-info/known-and-probable-human-carcinogens.html), suggesting that we should make all efforts to limit exposure to this substance in all settings.

Given these health risks above and in the attached testimony, it is surprising to me that County Council is seriously considering permitting industrial-scale piles of wood dust-containing mulch, and toxin and infectious agent-containing food waste compost in the proximity of residents in Howard County. In addition to the health effects on individuals, such legislation would obviously expose the county and indirectly all residents to liability issues on a variety of fronts. The comparisons to asbestos and cigarette smoke from a health and liability perspective provide lessons that we would all want to avoid. I would urge members of the County Council to support legislation that would limit these types of large-scale industrial mulching and composting operations to industrial M-1, M-2 and solid waste (SW) areas and prevent them from occurring in farming, agricultural, conservation, and residential areas in Howard County.

I would be glad to meet with members of the County Council or County Executive to further discuss any aspects of my testimony or other health concerns related to these issues.

Sincerely,

Victor Velculescu

Victor E. Velculescu, M.D., Ph.D.
Professor of Oncology and Pathology
Co-Director of Cancer Biology

Sidney Kimmel Comprehensive Cancer Center
Johns Hopkins University School of Medicine
1550 Orleans St., Rm 544, Baltimore, MD 21287
Phone 410.955.7033 FAX 410.502.5742
velculescu@jhmi.edu

Administrative Assistant
Jennifer Dillard
jdillar1@jhmi.edu

Sayers, Margery

From: R Alan Ewing <Al.Ewing@outlook.com>
Sent: Tuesday, September 19, 2017 8:41 PM
To: CouncilMail
Subject: Opposed To Industrial Mulch

Subject: Opposition to CB60 Without Major Amendments County Council,

We are very concerned with CB60 which will allow for industrial mulching and composting on ag preserve farmland and on all of RR/RC throughout Howard County. The current zoning language contained in CB60 is unacceptable and not only puts the rural communities at risk for well-documented safety and health concerns from industrial mulching, but now also makes this a countywide issue.

As it currently reads, there are clear loopholes that will allow those posing as tree farmers to conduct industrial mulching activities from 2 acres up to 5 acres, depending on whether on Howard County ag (ALPP), RR or RC parcels. This will result in unacceptable risks to ensuring the well-being of children, families and all individuals living in affected areas. Furthermore, DPZ has demonstrated a clear inability to enforce clear violators of CB20. We now ask, how can DPZ protect our families when loopholes in CB60 will allow for industrial mulching to occur, making enforcement even more challenging?

County Executive Kittleman, through CB60 introduced on his behalf, has simply not keep to his campaign promise to ensure that there is no possibility of industrial mulching on both Howard County and State of MD ag preserve parcels, despite his recent claims to the contrary. There is no separate section in CB60 that deals with State of MD ag (MALPF) restrictions (only Howard County ag). We worked hard to get State of MD ag restrictions included in the current zoning language for CB20 and are disappointed that it has been omitted from CB60.

There are many other key amendments needed in CB60 to make it acceptable to the health and well-being of thousands of families throughout Howard County. We are counting on the County Council to course correct with amendments added to CB60 to clearly prevent any chance of industrial mulch facilities from operating throughout farmland in Howard County, other than in M1/M2 commercially zoned land. This is the only way our Councilmembers will ensure everyone in potentially affected areas continues to be protected by current zoning regulations defined in CB20. Please take this matter seriously and add needed amendments to CB60 that we feel is unacceptable as it now stands.

Thank you, R. Alan Ewing

--

R. Alan (Al) Ewing
5667 Chamblis Dr.
Clarksville, MD 21029-1131
410 531-3640

Health Hazards of Industrial Wood Waste and Composting

Victor Velculescu, M.D., Ph.D.
Sidney Kimmel Comprehensive Cancer Center
Johns Hopkins University

Submitted to Howard County Task Force, December 14, 2014

Health Hazards

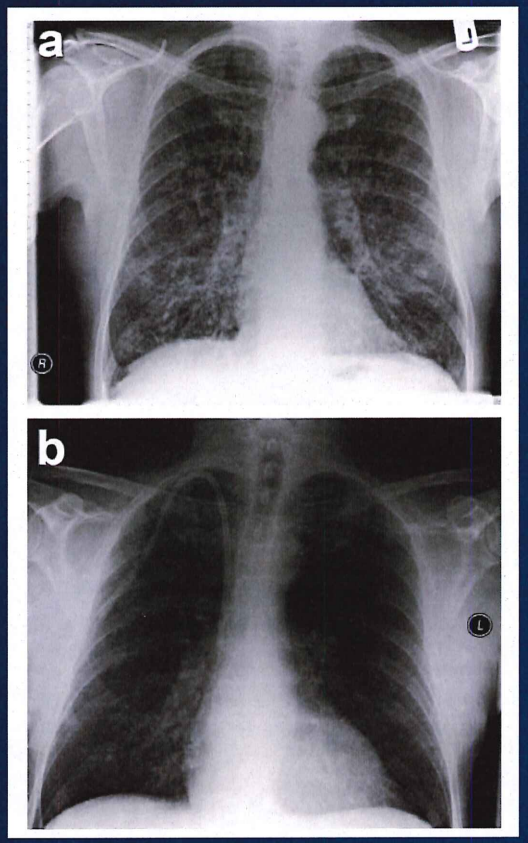
Industrial mulch processing and composting results in increased health risks

- Mulch infectious agents – fungi and bacteria
- Wood dust – allergic and mucosal effects
- Wood dust – cancer
- Composting – volatile compounds, organic dust, infectious agents
- Exposure and risk

Infectious agents example: acute fungal pneumonia

At presentation

2 months later



A 69 year old retired man with no significant medical history. Developed acute pneumonia after spreading tree bark mulch.

Hospitalized, developed kidney injury and failure. Remained dialysis dependent and housebound.

Died of sepsis 10 months later.

Inhalation of fungal spores from mulch was determined be the likely route of infection.

Medical MycologyCaseReports2(2013)125–127

Infectious agents example: acute fungal pneumonia

Mulch culture showing growth of microogranisms (Aspergillus fumigatus, Rhizopus spp., Sporobolomyces spp. and bacteria)

Medical MycologyCaseReports2(2013)125–127

Studies of mulch related infections in medical literature

1: Ameratunga R, Woon ST, Vyas J, Roberts S. Fulminant mulch pneumonitis in undiagnosed chronic granulomatous disease: a medical emergency. Clin Pediatr (Phila). 2010 Dec;49(12):1143-6. doi: 10.1177/0009922810370057. Epub 2010 Aug 19.

2: Siddiqui S, Anderson VL, Hilligoss DM, Abinun M, Kuijpers TW, Masur H, Witebsky FG, Shea YR, Gallin JI, Malech HL, Holland SM. Fulminant mulch pneumonitis: an emergency presentation of chronic granulomatous disease. Clin Infect Dis. 2007 Sep 15;45(6):673-81. Epub 2007 Aug 8.

3: Veillette M, Cormier Y, Israël-Assayaq E, Meriaux A, Duchaine C. Hypersensitivity pneumonitis in a hardwood processing plant related to heavy mold exposure. J Occup Environ Hyg. 2006 Jun;3(6):301-7.

4: Nagai K, Sukoh N, Yamamoto H, Suzuki A, Inoue M, Watanabe N, Kuroda R, Yamaguchi E. [Pulmonary disease after massive inhalation of Aspergillus niger]. Nihon Kokyuki Gakkai Zasshi. 1998 Jun;36(6):551-5. Japanese.

5: Weber S, Kullman G, Petsonk E, Jones WG, Olenchock S, Sorenson W, Parker, Marcelo-Baciu R, Frazer D, Castranova V. Organic dust exposures from compost handling: case presentation and respiratory exposure assessment. Am J Ind Med. 1993 Oct;24(4):365-74.

6: Johnson CL, Bernstein IL, Gallagher JS, Bonventre PF, Brooks SM. Familial hypersensitivity pneumonitis induced by Bacillus subtilis. Am Rev Respir Dis. 1980 Aug;122(2):339-48. PubMed PMID: 6774642.

Dozens of examples of scientific articles from throughout the world related to infectious agents in mulch.

Particularly important and dangerous for immune compromised individuals.

Recent study found that of patients with fulminant mulch pneumonitis, half of those died of due to infection and underlying kidney disease.

Health Hazards

Industrial mulch processing and composting results in increased health risks

- Mulch infectious agents – fungi and bacteria
- Wood dust – allergic and mucosal effects
- Wood dust – cancer
- Composting – volatile compounds, organic dust, infectious agents
- Exposure and risk

Health Effects of Wood Dust

From Centers for Disease Control and Prevention:

"Exposure to wood dust has long been associated with a variety of adverse health effects, including dermatitis, allergic respiratory effects, mucosal and nonallergic respiratory effects, and cancer. The toxicity data in animals are limited, particularly with regard to exposure to wood dust alone; there are, however, a large number of studies in humans."

1988 CDC OSHA PEL Documentation

Health Effects of Wood Dust

From *Ann Agric Environ Med* 2010, **17**, 29–44.

- **Abstract:** This paper reviews the literature on associations between dry wood dust exposure and non-malignant respiratory diseases … The results support an association between dry wood dust exposure and asthma, asthma symptoms, coughing, bronchitis, and acute and chronic impairment of lung function. In addition, an association between wood dust exposure and rhino-conjunctivitis is seen across the studies."

Dermatitis

- "Dermatitis. There are a large number of case reports, epidemiological studies, and other data on the health effects of wood dust exposure in humans. Dermatitis caused by exposure to wood dusts is common, and can be caused either by chemical irritation, sensitization (allergic reaction), or both of these together. As many as 300 species of trees have been implicated in wood-caused dermatitis."

1988 CDC OSHA PEL Documentation

Asthma

- "Allergic respiratory effects. Allergic respiratory responses are mediated by the immune system, as is also the case with allergic dermatitis. Many authors have reported cases of allergic reactions in workers exposed to wood dust … Asthma is the most common response to wood dust exposure"

1988 CDC OSHA PEL Documentation

Other Lung Effects

- "Mucosal and nonallergic respiratory effects (changes in the structure and function of the nasal mucosa and respiratory tract that are caused by exposure to wood dust). These changes include nasal dryness, irritation, bleeding, and obstruction; coughing, wheezing, and sneezing; sinusitis; and prolonged colds."

1988 CDC OSHA PEL Documentation

Health Hazards

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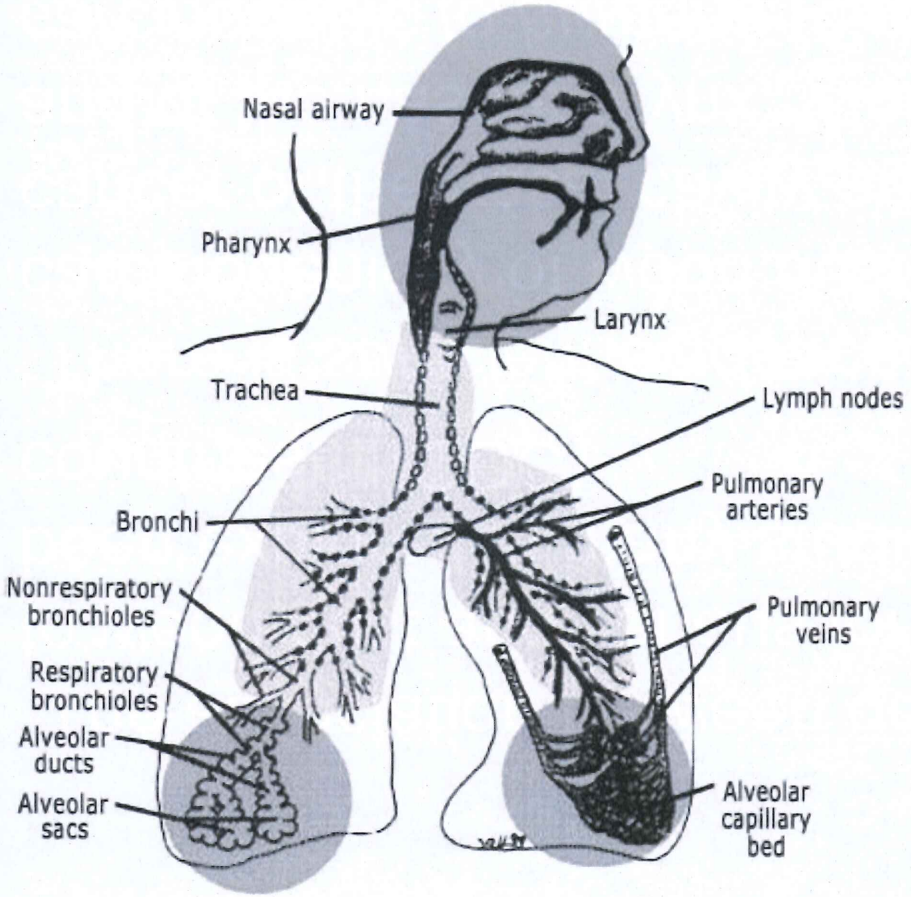
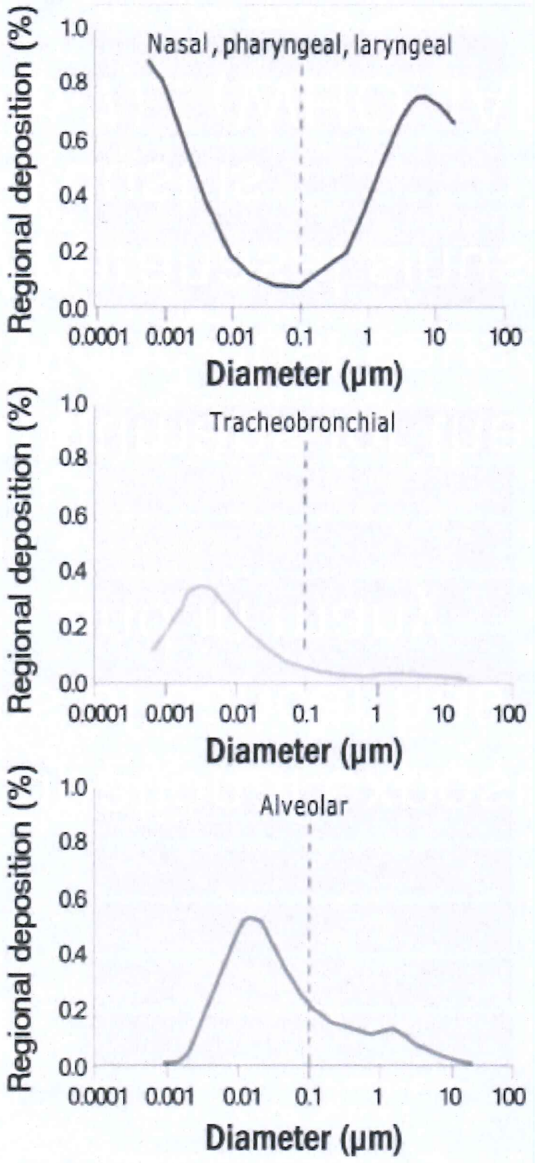
Cancer

- "The association between occupational exposure to wood dust and various forms of cancer has been explored in many studies and in many countries." (CDC)
- "There is *sufficient evidence* in humans for the carcinogenicity of wood dust. Wood dust causes cancer of the nasal cavity and paranasal sinuses and of the nasopharynx. Wood dust is *carcinogenic to humans (Group 1).*" (WHO, IARC)

Fig. 4.1 Deposition of inhaled particles in the human respiratory tract during nasal breathing





From Oberdörster *et al.*, (2005). Drawing courtesy of J Harkema. Reproduced with permission from Environmental Health Perspectives.

Nasal Cancer

- "Summary of evidence for nasal and sinus cavity cancers. The literature clearly demonstrates an association between wood dust exposure and nasal cancer. "
- English studies first identified this link by showing a 10- to 100 times-greater incidence of nasal adenocarcinoma among those exposed to wood dust than in the general population.
- "In the United States, three studies have reported a fourfold risk of nasal cancer or adenocarcinoma … and wood dust exposure."

1988 CDC OSHA PEL Documentation

Lung Cancer

- "Pulmonary cancer. A number of studies investigating the association between wood dust exposure and the development of lung cancer have been conducted."
- Milham (1974/Ex. 1-943) found a significant excess of malignant tumors of the bronchus and lung in workers who exposed to wood dust.

1988 CDC OSHA PEL Documentation

Hodgkin Lymphoma

- “Hodgkin's disease. Milham and Hesser concluded, on the basis of a case-cohort study of 1,549 white males dying of this disease … that there was an association between Hodgkin's disease and exposure to wood dust.”
- Other studies concluded that men working in the wood industries in the eastern United States as well as Washington state were at special risk for Hodgkin's disease.

1988 CDC OSHA PEL Documentation

Other Cancers

- "Other cancers. NIOSH (1987a/Ex. 1-1005) concluded that the data on the relationship between occupational exposure to wood dust and the development of cancers other than nasal, Hodgkin's disease, or lung cancers are insufficient and inconclusive."
- Emerging evidence that risks of oral cancer increase with exposure to wood dust.

1988 CDC OSHA PEL Documentation

Health Hazards

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Composting

A commonly used method of waste management involving aerobic, biological process of degradation of biodegradable organic matter

Composting Health Effects – VOC's

- Composting generates volatile organic compounds (VOCs)
- VOCs can comprise hundreds of compounds including benzene, toluene, m,p-xylene, o-xylene, styrene, formaldehyde, chloroform, ethylbenzene among others.
- High levels of VOC's observed in many studies at variety of composting sites

Environ. Sci. Techno/. 1995, 29, 896-902
J.L. Domingo, M. Nadal / Environment International 35 (2009) 382–389

Composting Health Effects – VOC's

VOC's comprise substances that are

- Carcinogenic: examples include benzene, a risk factor for leukemia, and formaldehyde, associated with nasal carcinoma
- Toxic: includes many VOC's that may lead to renal, hematological, neurological and hepatic damage as well as mucosal irritation.

J.L. Domingo, M. Nadal / Environment International 35 (2009) 382–389

Composting Health Effects – Biologic Agents

Composting sites due to their contents comprise infectious, allergenic, toxic, and carcinogenic agents including

- Fungi such as Aspergillus fumigatus (A. fumigatus), gram negative bacteria, and parasitic protozoa, all involved in a variety of infectious conditions
- Endotoxins produced by bacteria and fungi, including aflatoxins which are known to be associated with liver cancer

J.L. Domingo, M. Nadal / Environment International 35 (2009) 382–389

Composting Health Effects – Biologic Agents

Composting sites due to their contents comprise infectious, allergenic, toxic, and carcinogenic agents including

- Organic dusts that can lead to pulmonary inflammation (acute inflammation, hypersensitive pneumonitis), occupational asthma, chronic bronchitis, gastrointestinal disturbances, fevers, and irritation of eyes, ear and skin.

J.L. Domingo, M. Nadal / Environment International 35 (2009) 382–389

Composting Health Effects – Animal Mortality and Leachate

- Composting process can lead to increases in solubility of hazardous metals and organic substances in contaminated water (leachate)
- Burial of animal carcasses can lead to significant contamination of soil and groundwater with antimicrobials, steroid hormones, other veterinary pharmaceuticals

Q. Yuan et al. / Science of the Total Environment 456–457 (2013) 246–253

Composting Health Effects – Food Wastes and Pathogens

- "There have been numerous studies on pathogen content in the composting process."
- "In San Jose, California literally hundreds of people were affected by a nearby composting yard. This case illustrates the importance of carefully siting compost facilities with adequate setbacks from residential areas. One study, presented at a BioCycle conference recommended two miles isolation distance from residential and high travel areas."

Cronin, C. Pathogens and Public Health Concerns with Composting
Vermont Department of Environmental Conservation

Local Example – MDE and Recycled Green Industries

- "A Woodbine company that had been processing food scraps into composted materials with commercial applications … has ceased those operations after hearing concerns about pollution from the Maryland Department of the Environment… Food scraps present different environmental concerns than yard waste, the spokesman said. Namely, food contains "nutrients and potential pathogens" not found in yard waste, and are harmful to the environment when washed into surface and ground water, said Jay Apperson, the spokesman, in an email… The letter said water samples taken by the department on or near the company's property "confirm that the operation is generating polluted leachate and storm water and is discharging pollutants without a permit in violation of state law."

Rector, K. Baltimore Sun, Feb 6, 2012

Real World Example of Composting Health Effects on Nearby Residents

- Health effects to a residential area from environmental outdoor pollution hundreds of meters from a composting site (Occup Environ Med 2003;60:336–342)

		Bioaerosol pollution in residential air‡ up to $>10^5$ CFU m^{-3} air		Duration of present residency >5 years	
Reported health complaints§	SS¶	OR**	95% CI††	OR	95% CI
Respiratory tract					
Frequency of colds >5×/year	209	1.94	0.65 to 6.78	**4.72**	**1.19 to 31.83**
Bronchitis	210	**3.02**	**1.35 to 7.06**	**2.91**	**1.29 to 7.03**
Waking up due to coughing	202	**2.70**	**1.23 to 6.10**	**2.51**	**1.19 to 5.53**
Wheezing	207	1.96	0.84 to 4.82	**2.95**	**1.22 to 7.99**
Shortness of breath at rest	203	**3.99**	**1.31 to 15.19**	1.50	0.56 to 4.49
Coughing on rising or during the day‡‡	210	**2.67**	**1.17 to 6.10**	1.51	0.69 to 3.29
Shortness of breath after exertion	205	**4.23**	**1.74 to 11.34**	2.03	0.90 to 4.91
Eyes and general health					
Itching eyes >10×/year	206	1.35	0.61 to 3.05	**2.85**	**1.31 to 6.50**
Smarting eyes >10×/year	205	**2.44**	**1.02 to 6.22**	**2.42**	**1.06 to 5.86**
Nausea or vomiting >5×/year	204	2.65	0.87 to 9.97	**4.10**	**1.28 to 18.44**
Excessive tiredness >5×/year	200	**2.80**	**1.22 to 6.72**	1.83	0.84 to 4.11
Shivering	210	**4.63**	**1.44 to 20.85**	**3.67**	**1.32 to 12.20**
Joint trouble >10×/year	207	1.27	0.54 to 3.07	1.52	0.65 to 3.71
Muscular complaints >10×/year	201	1.17	0.47 to 2.99	1.39	0.55 to 3.86

Health Hazards

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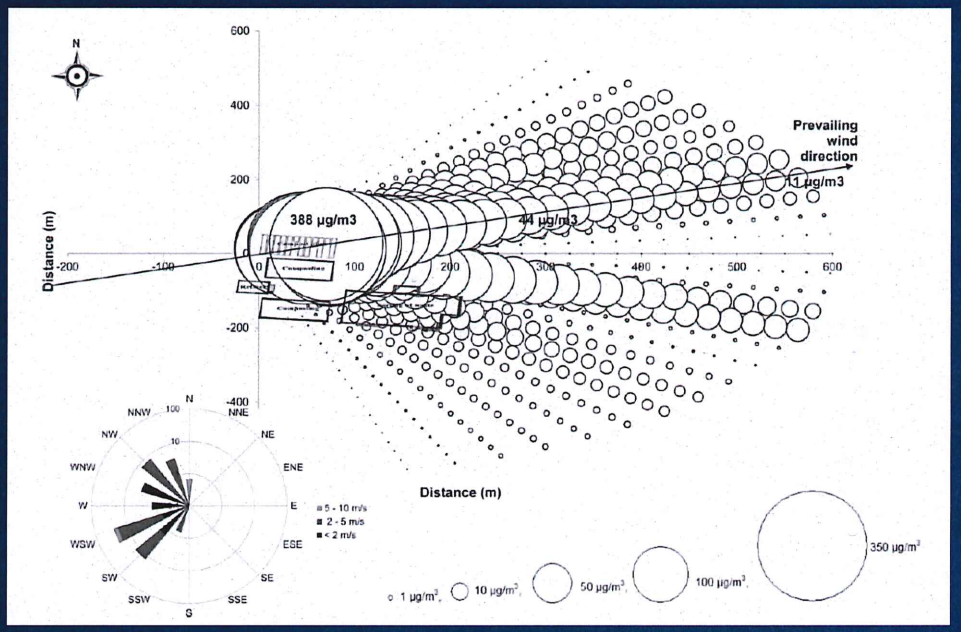
- Exposure and risk

Significant Medical Literature of Effects of Emissions from Waste Facilities

- Chalvatzaki E, Aleksandropoulou V, Glytsos T, Lazaridis M. The effect of dust emissions from open storage piles to particle ambient concentration and human exposure. Waste Manag. 2012 Dec;32(12):2456-68
- Nadal M, Inza I, Schuhmacher M, Figueras MJ, Domingo JL. Health risks of the occupational exposure to microbiological and chemical pollutants in a municipal waste organic fraction treatment plant. Int J Hyg Environ Health. 2009 Nov;212(6):661-9.
- Domingo JL, Nadal M. Domestic waste composting facilities: a review of human health risks. Environ Int. 2009 Feb;35(2):382-9.
- Herr CE, Nieden Az Az, Stilianakis NI, Eikmann TF. Health effects associated with exposure to residential organic dust. Am J Ind Med. 2004 Oct;46(4):381-5.
- Herr CE, zur Nieden A, Stilianakis NI, Gieler U, Eikmann TF. Health effects associated with indoor storage of organic waste. Int Arch Occup Environ Health.
- Herr CE, Zur Nieden A, Jankofsky M, Stilianakis NI, Boedeker RH, Eikmann TF. Effects of bioaerosol polluted outdoor air on airways of residents: a cross sectional study. Occup Environ Med. 2003 May;60(5):336-42.

Dust Emissions and Distance

- Dust emissions from open piles of mulch / organic waste can be measured at distances >500 m (>1500 feet) (Waste Management 32 (2012) 2456–2468)



Microorganisms and VOC's - Dispersion Distance

- High levels of molds, fungi, thermophilic fungi, bacteria and other microorganisms (concentrations of $>10^4$ colony forming units) could be measured >300 m (>1000 feet) in residential air neighboring outdoor organic waste (Am. J. Ind. Med. 46:381–385, 2004)
- Volatile organic compounds can detected at distances of up to 800 meters (Environment International 35 (2009) 382–389) and others

Dispersion of infectious agents – worst case scenario

- Infectious agents have been shown to be dispersed at larger distances. Prominent example includes outbreak of Legionnaires disease in a radius of 6km through release from an elevated water tower
- Dispersion led to 86 infected cases of which 18 (21%) were fatal

J Infect Dis. 2006 Jan 1;193(1):102-11

Summary

- Mulch and composting sites can pose risks for human health due to increased exposure of infectious agents, toxic substances, and VOC's. These include
  - infections due to fungal spores and bacteria
  - Increased risk of dermatitis, allergic respiratory effects, and mucosal and nonallergic respiratory effects
  - Increased risk of cancer, including nasal, lung, and Hodgkin lymphoma
- Exposure risks can occur at significant distances from waste processing area
- Numerous examples of exposure risks have been documented in affected populations world-wide

Testimony for the Howard County Council regarding proposed legislation CB60,

Victor Velculescu, M.D., Ph.D., September 11, 2017

My name is Dr. Victor Velculescu and I reside in Dayton, MD. I am speaking today on behalf of Big Branch Overlook, our residential organization.

I am a physician-scientist and serve as Co-Director of Cancer Biology at the Sidney Kimmel Comprehensive Cancer Center at the Johns Hopkins University School of Medicine. I have been researching cancer for over 25 years, and have written extensively on this topic, publishing over 150 articles in the medical literature. I have also been on the Board of Directors of the American Association of Cancer Research, the largest cancer research organization in the United States.

I have been a resident in Dayton, MD for the past 15 years, and have enjoyed with my family the beautiful rural setting of Howard County. This county is well known nationally not only for its beauty, but also for its high educational standards in its public schools, its high quality of life, and its high level of civic institutions, and for all these you should be commended. Therefore, it has been a surprise to me that on a topic as simple as what we will discuss in the proposed CB60 bill, that the leadership of Howard County is taking steps backwards in promoting the health and safety of its citizens.

Frankly, I am speaking here today because I think that the proposed legislation CB60, which as written would essentially permit limitless in-and-out industrial-scale mulching and composting operations in agricultural and residential areas, is a clear and present danger to the residents of Howard County. These dangers are real – they are documented by the medical literature and are highlighted by well-known health organizations, including the Centers for Disease Control (CDC) and the World Health Organization. The dangers from industrial mulch processing and composting include increased exposure to infectious and toxic agents, such as fungi and bacteria and their endotoxins, allergenic and carcinogenic effects of wood dust, and the inflammatory, toxic, and carcinogenic effects of organic dusts and volatile organic compounds. We may think of wood fragments and composting as something natural when performed on the farm and for the farm. However, the amount, type, and storage of materials that are generated in an industrial mulch or composting facility are no longer on a scale that we would encounter naturally or that are inherently safe.

These are not theoretical risks. I have provided in my submitted testimony a recent case report of a healthy retired gentleman that developed fungal pneumonia after exposure to mulch. He developed kidney failure and died of infections months later. It was clear that fungal spores from mulch were the route of infection. There are dozens of reports in the literature from throughout the world that are related to infectious agents in mulch, primarily fungi and bacteria. Fungal spores can travel large distances on the order of miles and are of particular risk to immune comprised individuals, including children and the elderly.

The dangers of food waste composting can be even higher because they lead to generation of not only infectious microbes, but also of volatile organic compounds that may be toxic. Such chemicals may lead to renal, hematological, neurological and liver damage. Composting processes can lead to increases of hazardous metals and organic substances in contaminated water, and burial of animal

cancer carcasses can lead to significant contamination of soil and groundwater with antimicrobials and other chemicals. As a clearly documented example in San Jose, California, hundreds of individuals had significant health effects simply because they lived near a composting yard. Closer to home, in 2012, the Maryland Department of the Environment shut down a food waste composting company in Woodbine, MD, after identifying toxic pollutants near the site.

In addition to infectious agents and volatile compounds, a clear health risk is also the exposure to wood and organic dust from mulch and composting facilities. The CDC has documented that wood dust particles are associated with a variety of health effects including dermatologic effects such as dermatitis, allergic respiratory effects including asthma, and mucosal and nonallergic respiratory effects, including bronchitis, irritation, bleeding, and obstruction, as well as coughing, wheezing, sinusitis, and prolonged colds. Organic dusts from composting can lead to pulmonary inflammation, occupational asthma, chronic bronchitis, gastrointestinal disturbances, fevers, irritation of the eyes, ear and skin. As one example among many, a well-documented study from 2003 showed increased risk of bronchitis, coughing, shortness of breath, fatigue and eye symptoms in residential areas hundreds of meters from a composting site. As a local example compiled by Mr. James Nickel, a number of individuals living up several miles from the Oak Ridge Farms facility in Woodbine, MD have reported respiratory related issues, and several were found to have wood particular matter in their respiratory system.

In addition to these issues, the health effect that is of most concern to me is that many aspects of industrial mulching and composting lead to dust particles and compounds that have been categorized by the World Health Organization and the CDC as carcinogenic or cancer causing. Very simply, these organizations indicate that "Wood dust causes cancer of the nasal cavity and paranasal sinuses, and of the nasopharynx. It is carcinogenic to humans." There are hundreds of papers in the medical literature that document the increased risk from wood dust for nasal cancers, lung cancers, Hodgkin's lymphoma, and potentially other kinds of cancers, as well as volatile organic compounds (including those generated from composting) as a risk factor for leukemia and nasal carcinoma.

Carcinogens by definition increase the risk of cancer, especially to those exposed over longer periods of time. Howard County has many communities where there are a large number of children and other residents that spend a significant amount of time outdoors and would be directly exposed to the health risks I have described. And of course, many residents plan to live in these communities for many years, even their entire lives. To allow exposure to infectious, toxic, and carcinogenic agents from these types of facilities to a large number of individuals in residential areas does not seem to be in the public interest. As I have said previously, this would make Howard County the equivalent of a petri dish of health experimentation. In addition to the health effects on individuals, such legislation would obviously expose the county and indirectly all residents to liability issues on a variety of fronts. Given this and other testimony that you have heard, I would urge members of the County Council to support legislation that would limit these type of industrial mulching and composting operations to industrial M-1, M-2 and solid waste (SW) areas and prevent them from occurring in farming, agricultural, conservation, and residential areas in Howard County.

I thank you for your attention.