

National Collaborative Work Group on
Green Cleaning and Chemical Policy Reform in Schools

www.cleaningforhealthyschools.org

Commissioned Technical Rebuttal Memorandum

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in response to:

“Efficacy of ‘Green’ Cleaning Products With Respect to Common Respiratory Viruses and Mold Growth,” Ed Light, MS, CIH, *Journal of Environmental Health*, May 2009, p24, National Environmental Health Association.

See/order the original article at http://www.neha.org/pdf/JEH/JEH05.09_TOC.pdf

Based on the Memorandum below, several organizations sent a Letter to the Editor of the *Journal* which will appear in the July-August 2009 issue.

Study Premise Flawed

We find the premise, substance, and recommendations of the article to be both inaccurate and misleading. First and foremost, the premise of the author’s study, in which 27 Green Seal-certified cleaning products were “evaluated for virucidal and fungicidal activity,” is flawed since certified green cleaners are not allowed by the US Environmental Protection Agency (EPA) to make antimicrobial claims.¹ Consequently, not only is the outcome of the study irrelevant, the recommendation that “green” cleaners be evaluated and selected for efficacy against pathogens is misguided.

It is no surprise that Green Seal-certified “green” cleaners do not test positive for antimicrobial ingredients, since its standard covers only general-purpose, restroom, glass, and carpet cleaners, and does NOT apply to “products required to be registered under the Federal Insecticide, Fungicide, and Rodenticide Act, such as those making claims as sterilizers, disinfectants, or sanitizers.”² Moreover, the

¹ US Environmental Protection Agency., [OPP– 00745; FRL–6809 –9], Pesticides; Draft Guidance for Pesticide Registrants on False or Misleading Pesticide Product Brand, Names, *Federal Register*, Vol. 67, No. 60, March 28, 2002, http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2002_register&docid=02-7495-filed.pdf

² Green Seal Environmental Standard for Industrial and Institutional Cleaners (GS-37), August 29, 2008, http://www.greenseal.org/certification/standards/GS-37_Industrial_Cleaner_Standard.pdf.

EPA does not allow antimicrobial products to be certified as “green.”³ Therefore, it would be alarming if these products did contain pesticidal ingredients.

Advocates of “Green” Cleaning Unfairly Represented

In contrast to what the article states, “green” cleaning products are not typically marketed as “natural materials to replace bleach and phenolics.” Rather, products such as Green Seal-certified glass, surface and floor cleaners are marketed as safer replacements for conventional products designed for the same purpose. The author’s comparison of “green” cleaners to disinfectants is inappropriate since green cleaners are not designed to replace disinfectants. Green cleaners should only be compared to comparable conventional cleaners.

The article asserts that organizations such as Green Seal that promote the use of green cleaners cite their advantages over traditional surface disinfectants. However, a closer look at what these organizations state shows that while some warn about the potential hazards associated with the unnecessary overuse of disinfectants, they typically cite the benefits of green cleaners over equivalent traditional cleaning chemicals. Thus, it is misleading for the author to imply that green cleaning advocates generally call for the wholesale replacement of disinfectants with green cleaners.

The article specifically mischaracterizes what several organizations and institutions recommend with respect to the use of green cleaners. For example, it inaccurately claims that “Green cleaning programs often specify exclusive use of products certified by the organization Green Seal,” and cites the Montgomery County (MD) Public School District’s 2006 *Healthy, High Performance Cleaning Program* as an example. A review of this policy shows that while it does call for the use of Green Seal-certified cleaners, it also directs custodial staff to “Disinfect [restroom] floors, counter tops, basins, toilets, urinals, and showers daily (after cleaning).”⁴

The author also misrepresents the position of Healthy Schools Network, which published a detailed *Sanitizers and Disinfectants Guide (2002)* that recommends that “schools follow all public health laws and regulations regarding the use of sanitizers and disinfectants in schools....”⁵

³ US Environmental Protection Agency, [OPP– 00745; FRL–6809 –9], Pesticides; Draft Guidance for Pesticide Registrants on False or Misleading Pesticide Product Brand, Names, Federal Register, Vol. 67, No. 60, March 28, 2002, http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2002_register&docid=02-7495-filed.pdf

⁴ Montgomery County Public Schools, Division of School Plant Operations, *Healthy, High Performance Cleaning Program*, September 2006; <http://www.montgomeryschoolsmd.org/departments/facilities/greenschoolsfocus/pdf/MCPSGreenCleaningPlan.pdf>.

⁵ Healthy Schools Network, *Guide to Sanitizers and Disinfectants* (2002), http://www.womenandenvironment.org/campaignsandprograms/SafeCleaning/disinfectants/SanitizersDisinfectants_HealthySchools.pdf. Also at www.healthyschools.org > Clearinghouse.

Similarly, while the article cites Hospitals for a Healthy Environment (H2E) as promoting the use of green cleaners to replace “toxic” disinfectants, H2E does not call for completely eliminating the use of disinfectants. Instead, H2E, which is an organization whose founding members include the American Hospital Association, is addressing the “over-disinfection” of non-critical care areas “in facilities that use disinfectants on almost every surface.” Janet Brown, an H2E spokesperson, stated in a January 2008 article that “Of course one wouldn’t use a green cleaner in a critical-care area, but there is plenty of room for less-toxic options throughout the medical center: toilet cleaners, oven cleaners, window cleaners, drain cleaners, the list of opportunities goes on and on.”⁶

Like Montgomery County Public School District and Healthy Schools Network, advocates of “green” cleaning do not typically recommend avoiding the use of disinfectants altogether. Rather, they are working toward responsible use of disinfectants on “touch points” where disease transmission is likely to occur, after a surface has been cleaned.

The article also selectively presents the 2006 green cleaning position of the American Society for Healthcare Environmental Services (ASHES) by omitting the first section of its position statement, which says “ASHES supports cleaning procedures that are friendly to the environment...”⁷ More importantly, the author fails to cite more recent statements by ASHES that elaborate on its support for the use of green cleaners. For example, in January 2008, Patti Costello, Executive Director of ASHES stated that, “When ASHES talks about environmentally preferred products, we’re talking about products that will not be harmful to the environment yet will still be effective in a healthcare environment. Where appropriate, we urge members to try to minimize the amount of chemicals used; for example, not using disinfectants on floors in noncritical areas.”⁸

Unfairly Criticizes and Characterizes the Green Seal Standard

The author criticizes the Green Seal standard (GS-37) for Institutional and Industrial Cleaners, which is designed to protect workers from exposure to cleaning products, because some of the criteria are based on testing the concentrated products. Since workers use and are potentially exposed to the concentrated product, as well as the diluted “as used” product, this extra layer of protection is important to reduce unnecessary exposures. Almost any dangerous chemical can be deemed “safe” if it is diluted enough. The Green Seal standard takes a precautionary, prevention-based approach instead.. The paper also asserts that “certified green products” use natural substances – which they don’t

⁶ “Greener Cleaners” Pros Say ‘Show Me the Science,’ *Healthcare Purchasing News*, January 2008.

⁷ “ASHES Adopts Position on Green Cleaning,” *Facilities.net*, November 2006; <http://www.facilitiesnet.com/healthcarefacilities/article/ASHES-Adopts-Position-on-Green-Cleaning--5626>

⁸ *Healthcare Purchasing News*, “Green Cleaners? Pros say ‘Show me the Science,’” January 2008; <http://www.hpnonline.com/inside/2008-01/0801-PS-GreenClean.html>.

necessarily do unless those substances are demonstrated to meet the health and environmental protection guidelines in the standard. The author also asserts that the Green Seal standard does not address the product's "carbon footprint" – when, in fact, it does by requiring all products to be concentrated, which lowers emissions from transportation and packaging.

Downplays Hazards of Conventional Cleaners

The article fails to take a precautionary approach to reducing human and environmental exposures to hazardous chemical ingredients in cleaning products. For example, it downplays the hazards of volatile organic compounds (VOCs), which are often emitted from conventional cleaners, by asserting that they "are normally present in indoor air at the parts per billion levels...and are commonly considered normal constituents of indoor air." To support this claim, the article cites a 2007 newsletter by Air Quality Sciences (AQS), an organization that specializes in indoor air quality (IAQ) issues. AQS has published many other newsletters and reports contradicting the author's conclusion about the safety of VOCs in indoor air. For example, another AQS newsletter reports that, "Indoor air pollution in schools can pose a serious threat to children's health. Among the pollutants of greatest concern are volatile organic compounds (VOCs) that emit from building materials, furnishings, finishes and cleaning products."⁹

In addition, AQS's overview on indoor air quality states: "Indoor pollutant levels inside [buildings] can be two to five times higher and sometimes as much as 100 times more polluted than outside air."¹⁰ AQS also cites the American College of Allergy, Asthma and Immunology, which noted in 2000 that "50 percent of all illnesses are either caused or aggravated by poor indoor air quality."¹¹ Many of the VOCs of concern that are listed by AQS are found in cleaning products, including 2-butoxyethanol, toluene, xylene, methylene chloride, and limonene.¹² AQS specifically lists "Cleaning Products That Might Cause Indoor Air Concerns," including degreasers, disinfectants, furniture polishes, oven cleaners, tub and tile cleaners, and floor waxes.¹³

In 2008, AQS published a White Paper on "Protecting Children's Health," which contradicts the author's claim that IAQ and VOCs are not harmful. It states:

According to the U.S. Department of Education nearly 73 million people in the U.S., including 68.5 million children, spend a

⁹ Air Quality Sciences, "GREENGUARD Takes on Indoor Air in Schools," AifFAQs, undated, <http://www.aerias.org/DesktopModules/ViewDocument.aspx?DocumentID=5>.

¹⁰ AQS, "Indoor Air Quality: An Overview," citing US Environmental Protection Agency, *Indoor Air Quality and Work Environment Study, Volume IV*. Research Triangle Park, NC. June 1991; <http://www.aerias.org/DesktopDefault.aspx?tabindex=2&tabid=14>.

¹¹ AQS, "Indoor Air Quality: An Overview", undated website reviewed May 20, 2009.

¹² AQS, "VOCs: A Major Contributor to Indoor Air Pollution," undated website reviewed May 20, 2009; <http://www.aerias.org/DesktopDefault.aspx?tabindex=0&tabid=75>.

¹³ AQS, "Cleaners and Disinfectants," undated website reviewed May 20, 2009); <http://www.aerias.org/DesktopModules/ArticleDetail.aspx?articleId=112&spaceid=1&subid=7>.

significant amount of time each day in more than 120,000 public and private schools. Many of the school buildings are in poor condition, which accounts for the U.S. EPA's estimate that 50 percent of U.S. schools have IAQ problems.

"Because children spend so much time at school, maintaining good IAQ in these environments is critical for minimizing their exposure to potentially dangerous indoor air pollutants," said Tony Worthan, MPH and President of AQS. "AQS measured volatile organic compound (VOC) levels in more than 200 U.S schools and found, on average, 345 VOCs in the indoor air, some of which are potential carcinogens." continued Worthan. "This data further justifies the need to take meaningful steps toward improving IAQ in schools."

Researchers have clear evidence that the quality of indoor air is a factor in causing asthma and over a 14-year period the proportion of children under the age of five with asthma increased by 160 percent. Asthma is the leading cause of school absenteeism and hospitalizations in children under the age of 15, accounting for an estimated 14 million lost school days and \$16 billion in annual health care expenditures for both children and adults.

Additionally, chemicals in schools have shown to affect children's learning. The National Research Council noted that available research suggests an association between the condition of a school building and student achievement.¹⁴

Similarly, the article dismisses the very real and prevalent health risks associated with conventional cleaning products. It cites EPA Region IX to support its claim that "Product exposure is a common source of janitorial injury but cleaning is not cited as a major contributor." The EPA-funded Janitorial Products Pollution Prevention Project (JP4) to which the article is referring, however, provides evidence to the contrary. It states:

Each year about six out of every hundred professional janitors are injured by the chemicals that they use. Burns to the eyes and skin are the most common injuries, followed closely by breathing toxic fumes.

¹⁴ AQS, "What are Your Children Breathing in School," News Release: July 30, 2008; <http://www.aqs.com/DesktopDefault.aspx?tabid=43&ItemId=78>.

*One third of the cleaning chemicals used today have ingredients that can harm you. These ingredients are in products for cleaning glass, restroom fixtures, metal, kitchens, carpets, and hard floors, to name only a few.*¹⁵

The author recommends that evaluations of cleaning products should “address realistic use scenarios,” but then relies heavily on goggles and gloves, which “are typically required to avoid problems” such as eye and skin irritation, ignoring the fact that many custodial workers do not consistently use safety equipment. He fails to note that while the EPA project conducted a significant amount of outreach to custodial staff to promote the use of personal protective equipment, it simultaneously promoted the use of less-toxic cleaning products.

Other scientific studies have conclusively linked exposure to cleaning products with adverse health effects. For example, a study of 1915 confirmed cases of work-related asthma reported to health departments in four states found that 12% were associated with exposure to cleaning products used in schools, medical facilities, hotels and other types of facilities.¹⁶

Conventional cleaning products contain a significant number of chemicals that are harmful to custodial workers and building occupants, particularly children. For example:

- 2-Butoxyethanol, or ethylene glycol monobutyl ether (EGBE), is a common cleaning product ingredient that can damage red blood cells, leading to anemia. Limited evidence indicates it is carcinogenic and toxic to the reproductive system.¹⁷ Routine home cleaning using 2-butoxyethanol cleaners can result in air contamination that exceeds established workplace exposure limits.¹⁸

¹⁵ Janitorial Products Pollution Prevention Project, *Cleaning Chemical Injuries*, <http://www.westp2net.org/Janitorial/Be%20Healthy%200.pdf>.

¹⁶ Rosenman, KE et al, “Cleaning Products and Work-Related Asthma,” *Journal of Occupational and Environmental Medicine*, May 2003, 45(5):556-63 and Mazurek, JM et al., Work-related Asthma in the Educational Services Industry, “California, Massachusetts, Michigan, and New Jersey, 1993-2000, *American Journal of Industrial Medicine*, 2008, 51(1): 47-59. <http://www.ncbi.nlm.nih.gov/pubmed/12762081?dopt=AbstractPlus>.

¹⁷ National Toxicology Program, Toxicology and Carcinogenesis Studies, *2-Butoxyethanol (CAS NO. 111-76-2) in F344/N Rats and B6C3F1 Mice (Inhalation Studies): National Toxicology Program Technical Report Series*, 2000, 484: 1-290.

¹⁸ Nazaroff, WW, et al., “Indoor Air Chemistry: Cleaning Agents, Ozone and Toxic Air Contaminants: Prepared for the California Air Resources Board and the California Environmental Protection Agency,” 2006.

- Phthalates, particularly diethyl phthalate (DEP), are frequent ingredients in the fragrances used to scent cleaning products. Dibutyl phthalate (DBP) is also found in some floor finishes and window cleaners. Epidemiological studies link more alarming health effects to DEP and DBP exposure, including male reproductive system abnormalities¹⁹ altered sex hormone levels in baby boys²⁰ and men,²¹ altered thyroid hormone levels in women,²² and increased insulin resistance in men.²³ Dibutyl phthalate is on the list of chemicals known to the State of California to cause reproductive toxicity due to its ability to cause male and female developmental harm.²⁴ Exposure to other phthalates is linked to increased risk of asthma and allergies in children.²⁵
- Ethanolamines, which can be found in conventional glass cleaners and degreasers, are corrosive and listed as “asthmagens” by the Association of Environmental and Occupational Clinics (AOEC).²⁶ Asthmagens are chemicals that can cause new cases of asthma (through a process called respiratory sensitization) among people who did not have the disease prior to their exposure.

Green Seal-certified cleaning products prohibit carcinogens, reproductive toxins, asthmagens and other chemicals of concern to prevent exposures of such hazardous chemicals on applicators, vulnerable populations, and the environment.

¹⁹ Swan, SH et al. “Decrease in Anogenital distance Among Male Infants with Prenatal Phthalate Exposure,” *Environmental Health Perspectives*, 2007, 113(8), 1056-1061.

²⁰ Main, KM et al., “Human Breast Milk Contamination with Phthalates and Alterations of Endogenous Reproductive Hormones in Infants Three Months of Age,” *Environmental Health Perspectives*, 2006, 114(2), 270-276.

²¹ Duty, SM et al. “Phthalate exposure and reproductive hormones in adult men.” *Human Reproduction*, 2005, 20(3), 604-610.

²² Huang, P., et al., “Associations Between Urinary Phthalate Monoesters and Thyroid Hormones in Pregnant Women,” *Human Reproduction*, 2007, 22(10), 2715-2722.

²³ Stahlhut, RW et al. “Concentrations of urinary phthalate metabolites are associated with increased waist circumference and insulin resistance in adult U.S. males.” *Environmental Health Perspectives*, 2007, 115(6), 876-882.

²⁴ Di-n-butyl-phthalate, State of California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Safe Drinking Water and Toxic Enforcement Act of 1986, *Chemicals Known to the State of California to Cause Cancer or Reproductive Toxicity*, December 19, 2008, http://www.oehha.org/prop65/prop65_list/files/P65single121908.pdf.

²⁵ Bornehag CG, et al., The Association Between Asthma and Allergic Symptoms in Children and Phthalates in House Dust: A Nested Case-control Study. *Environmental Health Perspectives*, 2004, 112(14): 1393-1397.

²⁶ Association of Occupational and Environmental Clinics, *Exposure Update*, January 9, 2009; http://www.aoec.org/content/EXPOSURE_update_1_7_2009.xls.

The author also states that “concerns for aquatic toxicity and general environmental protection are theoretical, lacking evidence of impacts.” One impact of conventional cleaning chemicals is that some of the hazardous ingredients they contain are now ubiquitous in water supplies across the nation. Alkylphenols enter rivers, lakes, and the ocean through discharges of treated wastewater.²⁷ For example, in 2002, the U.S. Geological Survey (USGS) found alkylphenol ethoxylates (APEs) and breakdown products in 70% of North American streams surveyed.²⁸ According to the US EPA, which encourages the use of cleaners devoid of APEs, these substances biodegrade under anaerobic conditions to alkylphenols, which persist in the environment, have high toxicity to aquatic organisms, and may be endocrine disruptors (compounds that adversely affect the endocrine system that controls metabolism, reproduction, and growth).²⁹ A Centers for Disease Control (CDC) study found one common alkylphenol, nonylphenol, in 51% of Americans tested.³⁰

Underestimates the Efficacy of Peroxide, A Safer Disinfectant

The article downplays the potential of modern peroxide-based disinfectants, which are generally considered safer than phenolics and bleach, by stating that hydrogen peroxide is “a compound capable of limited spectrum disinfection,” without providing a citation. A new line of germicides containing “accelerated hydrogen peroxide” (AHP) includes products that are registered with EPA as broad-spectrum, hospital-grade disinfectants capable of killing bacteria (including antibiotic-resistant MRSA strains), viruses (including the common cold Rhinovirus and the common flu Influenza viruses), which the author mentions.³¹ While these products are not certified as “green” (because EPA does not allow this), hydrogen peroxide is not an asthmagen, and biodegrades rapidly to non-toxic breakdown products, unlike many of the traditional disinfectants supported by the author. Dismissal of peroxide-based disinfectants is further demonstration of the gaps in the author’s background research. The article cites a 2005 report to support its claim that the efficacy of hydrogen peroxide is limited against non-enveloped viruses (NEVs) and fungi. Again, this ignores advancements in technology, since some modern peroxide-based disinfectants can kill NEVs and fungi of concern, such as athlete’s foot, mold and mildew.^{32, 33}

²⁷ Ying, GG et al., “Environmental Fate of Alkylphenols and Alkylphenol Ethoxylates – A Review.” *Environmental International*, 2002, 28(3): 215-226

²⁸ USGS, *U.S. Geological Survey, Emerging Contaminants Project*. 2002, <http://toxics.usgs.gov/regional/emc/>.

²⁹ US Environmental Protection Agency, Design for the Environment Program, <http://www.epa.gov/dfe/pubs/laundry/techfact/keychar.htm#surfactants>, undated website.

³⁰ Calafat, AM et al., “Urinary Concentrations of Bisphenol A and 4-Nonylphenol in a Human Reference Population,” *Environmental Health Perspectives*, 2005; 113(4): 391-395.

³¹ Johnson Diversey, Inc., *Oxivir Tb: General Virucide, Bactericide, Tuberculocide*, http://www.ahptechnology.com/Portals/0/Products/Oxivir/SPC729_OxivirTb.pdf

³² Johnson Diversey, Inc. op cit.

³³ Johnson Diversey, *Reference Sheet for Oxivir Five 16 Concentrate*, 2008; http://www.ahptechnology.com/Portals/0/Products/Oxivir/LIT749_Oxivir_Brochure_Final.pdf.

Moreover, the author specifically advocates the use of phenolic and chlorinated disinfectants (such as bleach) without addressing their potential health risks, particularly on children or custodial staff. According to the California Office of Environmental Hazard Assessment (OEHHA), o-phenylphenol is known to cause cancer.³⁴ Bleach is highly corrosive to the skin, eyes and respiratory system according to MSDSs for this product. Both o-phenylphenol and chlorine (which is emitted from bleach) have been shown to cause respiratory sensitization.³⁵

Recommendations Contradict Best Practices for Cleaning and Disinfection

The author does a disservice to best practices by dismissing “routine cleaning” as an essential element of an effective disinfection protocol, since many disinfectants and sanitizers (particularly bleach) are ineffective on dirty surfaces. The use of disinfecting cleaners, which the author seems to support, may not only result in the unnecessary overuse of (and exposure) to disinfectants, but can also undermine the effectiveness of the disinfection process itself. According to current US Centers for Disease Control (CDC) *Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008*:

*Cleaning is the removal of visible soil (e.g., organic and inorganic material) from objects and surfaces and normally is accomplished manually or mechanically using water with detergents or enzymatic products. Thorough cleaning is essential before high-level disinfection and sterilization because inorganic and organic materials that remain on the surfaces of instruments interfere with the effectiveness of these processes.*³⁶

The article cites but then downplays the 2003 CDC disinfection guidelines, which calls for the use of disinfectants on “high-touch surfaces only” outside critical-care areas of health care facilities, without providing any evidence that this well-established guidance does not protect public health. This creates confusion and flies in the face of commonly held “best practices.” Instead, the author supports a vague concept of “enhanced surface sanitation,” which is likely to mean increased use of disinfectants – without demonstrating its need or efficacy.

The author is also at odds with current “best practice” guidance for remediation of mold, which has been issued by US EPA. EPA does not recommend the use of bleach to remediate mold. Mold can generally be removed from nonporous (hard) surfaces by wiping or scrubbing with water and detergent.³⁷ In some situations,

³⁴ California Office of Environmental Health Hazard Assessment, “Chemicals Known to the State to Cause Cancer or Reproductive Toxicity Under the Safe Drinking Water and Toxic Enforcement Act of 1986,” December 19, 2008,

http://www.oehha.org/prop65/prop65_list/files/P65single121908.pdf.

³⁵ Association of Occupational and Environmental Clinics, Exposure Code List, January 29, 2009; http://www.aoec.org/content/EXPOSURE_update_1_7_2009.xls.

³⁶ http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/Disinfection_Nov_2008.pdf

³⁷ US Environmental Protection Agency, “A Brief Guide to Mold, Moisture and Your Home,” <http://www.epa.gov/mold/moldcleanup.html>.

porous materials that are wet and have mold growing on them may need to be removed and discarded. EPA strongly advises against painting or caulking over moldy surfaces.

We do not support the author's recommendations that "selection of *cleaning* products should consider pathogen control along with precautions for minimizing impacts on applicators, sensitive occupants, and the environment" and that "green cleaning products should be evaluated for efficacy against pathogens." The selection of all cleaning products for their ability to control pathogens runs counter to CDC guidance, which calls for surfaces to be cleaned first, then disinfected, rather than using disinfectant cleaners, which can unnecessarily expose workers to pesticides in those products.

Cleaners should be chosen on the basis of their ability to clean, which is an important step in pathogen control. Only disinfectants should be chosen based on their ability to kill pathogens. Certified green cleaning products should replace conventional cleaners, then be followed by disinfectants, when necessary.

Endorsers

American Federation of State, County, and Municipal Employees-International
Community Action to Fight Asthma (CA)
Connecticut Foundation for Environmentally Safe Schools
Environmental Working Group
For a Better Bronx
Green Purchasing Institute
Green Schools Initiative
Healthy Child Healthy World
Healthy Schools Network
Massachusetts Coalition for Occupational Safety and Health
Massachusetts Healthy Schools Network
New York State United Teachers
Oregon Environmental Council
Preventing Harm Minnesota
Regional Asthma Management and Prevention/RAMP (CA)
San Francisco (CA) Asthma Task Force
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...to add your endorsement, please email the National Collaborative Work Group on Green Cleaning and Chemical Policy Reform at info@cleaningforhealthyschools.org

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