U.S. CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MD 20814

May 31, 2013

Jeff Ruch
Executive Director
Public Employees for Environmental Responsibility (PEER)
2000 P Street, NW, Suite 240
Washington, D.C. 20036

Re: PEER Demand for Correction of Information under the Information Quality Act: Synthetic Turf Report

Dear Mr. Ruch:

This letter responds to the complaint you submitted on behalf of the Public Employees for Environmental Responsibility (PEER), seeking correction of U.S. Consumer Product Safety Commission (CPSC) staff's 2008 Analysis and Assessment of Synthetic Turf "Grass Blades" (2008 Report) and the accompanying press release under the Information Quality Act.[1] Your complaint asserts that the 2008 Report and press release do not comport with the Office of Management and Budget (OMB) Guidelines for Ensuring and Maximizing the Quality, Utility, and Integrity of Information Disseminated by Federal Agencies (OMB Guidelines), and the CPSC's Information Quality Guidelines.

Specifically, your complaint states that the 2008 Report does not use reliable data sources or sound analytic techniques. Your complaint further asserts that the conclusions of the 2008 Report are not supported by the report's findings. In addition, your complaint requests that the CPSC should commission a new comprehensive study that takes into account all current knowledge about the composition of all components of artificial turf and that characterizes more accurately the real and potential risks from artificial turf.

For all the reasons we discuss below, we believe that at the time of the 2008 Report, CPSC staff's assessment was an appropriate, limited study for addressing the questions raised in early 2008, specifically about lead in synthetic turf products. The questions raised related to the potential for very young children to be exposed to lead while sitting or playing on synthetic turf.

[1] These comments are those of CPSC staff and they have not been reviewed or approved by, and may not necessarily reflect, the views of the Commission.

1. 2008 Report

a. Data Sources

Your complaint asserts that the 2008 Report did not use reliable data sources. More specifically, you state that the study used limited samples and provided no information about how staff selected the samples.

In 2008, prior to staff's assessment, no data existed concerning possible lead exposure from young children's contact with synthetic turf. Based on staff's previous experience evaluating possible exposures from contact with consumer products, including those containing lead, and with an understanding of the likely behaviors and activities of young children, staff focused on children's direct contact with synthetic turf surfaces with their hands and the potential for subsequent hand-to-mouth transfer of lead that might collect on the hands.

Therefore, staff concentrated its limited resources on collecting and analyzing surface wipes on as many synthetic turf samples as were available to staff. As stated in the report, staff analyzed samples from extra turf that had been left over after a field was installed or that became available when a field was dismantled, in addition to visiting in-service synthetic turf fields.

CPSC staff evaluated approximately 40 synthetic turf products initially. Nine of these (selected because they appeared likely to contain lead and were made available to staff for testing in the laboratory) were subjected to more extensive testing in the CPSC laboratory for lead content, using state-of-the-art analytical techniques, and for potential lead exposure, using the protocols developed by staff over years of evaluating products, resulting in the best available data at that time.

The tested products were from a variety of sources, from four different manufacturers (Table 1 in the report indicates the manufacturer as Firm 1, 2, 3, or 4), and consisted of both old (used and unused) and new products. Although these samples may not be representative of all synthetic turf products in the United States in 2008, staff believed that the data collected were adequate to illustrate the potential levels of exposure in children who might play on such surfaces.

b. Analytical Techniques

Your complaint asserts that the 2008 Report did not use sound analytical techniques because CPSC tested only for lead and because the study's authors made questionable assumptions. At the time of the 2008 report, because no standardized methods existed for the evaluations at issue, staff employed established methods that were developed in previous studies to assess the potential for children's exposure to substances through contact with products and surfaces and subsequent, normal hand-to-mouth contact. Staff developed wipe testing procedures from methods for measuring lead in dust on surfaces in homes impacted by lead-based paint, modified for evaluation of children's hand contacts with products and surfaces in the context of consumer products. The protocol incorporated information about children's contact with objects and surfaces, including actions such as touching, grasping, gripping, and rubbing, and data about the factors that influence transfer of residues from surfaces to skin and from surfaces to laboratory wipe-sampling materials.

Based on staff's expertise in, and prior use of, these protocols, staff concluded that these protocols were scientifically reasonable and appropriate methods to estimate the amount of residue that might transfer from surfaces to the skin of hands during contact. Accordingly, we believe that the analytical techniques were sound.

i. Testing for Lead Only

At the time staff evaluated synthetic turf, potential lead exposure was the primary issue raised concerning synthetic turf fields. Therefore, the 2008 Report was intended to test grass blades only for lead and not for other toxic substances. This purpose is stated in the report. The opening sentence of the 2008 Report states: "CPSC staff identified synthetic turf products for analysis of total lead content and accessible lead." The fact that staff's analysis covered only lead, when that scope was clearly identified in the report, does not make the analytical techniques unsound or the information provided in the report inaccurate or unreliable.

ii. Assumptions

Your complaint states that the 2008 Report relied on questionable assumptions because the 2008 Report focused on ingestion as the route of exposure. Based on staff's experience with lead-containing products and products used primarily outdoors, staff's knowledge about children's behaviors, and in the context of limited available resources, staff focused on the route of exposure most likely to dominate. That route of exposure is through hand contact with the product, transfer of residue from the product surface to the hands, and subsequent hand-to-mouth behavior that is normal for young children.

Your complaint also questions the report's assumptions because few older fields were tested. Staff analyzed as many products as staff reasonably could obtain for this particular study. In 2008, very few older synthetic turf fields existed for possible evaluation, and the products that ultimately were tested were the only ones made available to staff. Staff's assumptions were stated clearly in the report and were reasonable.

c. Support for Conclusions

Your complaint asserts that the conclusions in the 2008 Report are not supported because subsequent reports have found that some artificial turf fields exceeded the lead limit of 300 mg/kg that the Consumer Product Safety Improvement Act of 2008 (CPSIA) established for consumer products intended for children. Staff's conclusions in the 2008 Report about lead exposure from synthetic turf were based on the laboratory analyses and the subsequent exposure and risk assessment in the context of the Federal Hazardous Substances Act (FHSA). At the time of the 2008 assessment, with the exception of lead in paints and similar surface coatings, regulation of lead in products was entirely under the FHSA. Staff conducted its assessment under the framework of the FHSA. For a product to be considered a hazardous substance under the FHSA, one must determine that the product exposes consumers to quantities of lead that may cause substantial injury or illness under reasonably foreseeable conditions of handling or use, including ingestion. Staff considered that daily exposure to approximately 15 micrograms (μg) of lead would be associated with adverse health effects at a level that would constitute substantial illness in a young child. Results from the CPSC staff testing and analysis found no samples with exposure estimates exceeding 15 micrograms/day.

Although staff agrees that there is likely no "safe" level of exposure to lead, staff's findings indicated that use of synthetic turf by young children would not cause substantial injury or illness under reasonably foreseeable use. Children's products now fall under the restrictions on lead content provided by the CPSIA. However, synthetic turf products are not considered children's products regulated under the CPSIA.

2. Press Release

You also objected to the press release issued about the Synthetic Turf Report on the basis that it did not "comport with CPSC's standards of objectivity," and is an "overbroad conclusion in light of the limitations of the study." The headline in the July 30, 2008 press release stated: "CPSC Staff Find Synthetic Turf Fields OK to Install, OK to Play On."

In this case, the 2008 Report provides the basis for the statements concerning lead content in artificial turf that were disclosed in the press release. The first sentence of the press release explains the context of the announcement: "The U.S. Consumer Product Safety Commission (CPSC) staff today releases its evaluation of various synthetic turf fields. The evaluation concludes that young children are not at risk from exposure to lead in these fields." This statement also contains a hyperlink to the actual "Synthetic Turf Report," placing the focus of the press release on lead in artificial turf and nothing more. The remainder of the press release discusses the staff's evaluation as it relates to lead. No other product or hazard is referenced. Similarly, the referenced video briefly shows a demonstration of CPSC testing of sample fields.

When the Commission initiates the public disclosure of information that reflects on the safety of a consumer product or class of consumer products, the Commission follows procedures to confirm that such information is accurate and not misleading. In addition, the Commission has determined that a technical, scientific, or other evaluation that yields or corroborates the product information to be disclosed constitutes "reasonable steps" to assure the accuracy of information released to the public. *See* 16 C.F.R. § 1101.32(a)(2). Because the press release is based on the 2008 Report, links to the 2008 Report and refers to the 2008 Report's findings about lead, the press release does not lack objectivity and is not overbroad.

3. Requested Actions

Your complaint asks that the CPSC: (1) remove from CPSC's website all materials related to the 2008 Report; (2) disseminate warnings about unknown risks from exposure to lead and other chemicals from artificial turf; and (3) conduct an independent study testing large samples of fields. We have reviewed the 2008 Report in light of the points you make in your complaint. We also have reviewed OMB's and CPSC's Information Quality Guidelines, which focus on data and information accuracy; neither set of Information Quality Guidelines requires an agency to take additional steps beyond correcting inaccurate information.

As explained above, we have concluded that the the 2008 Report is appropriately and scientifically based and that the 2008 Report's conclusions are supported. Therefore, we will not remove the 2008 Report from the CPSC website and we will not disseminate any warnings about exposure to artificial turf. For the same reasons, additional studies of artificial fields are not merited.

Your complaint also asks that the CPSC remove the press release and accompanying video from CPSC's website. For the reasons stated above, we decline your request.

4. Conclusion

Staff continues to evaluate information about synthetic turf products to promote the safety of children who use them. Since 2008, more information has become available about chemical substances and other potential hazards associated with synthetic turf. However, staff has not found any information that casts doubt on staff's evaluation in the 2008 Report. Further, staff continues to participate in interagency working groups to study new, related issues. Due to

funding and staff limitations and the absence of compelling evidence that additional studies are necessary, currently no additional Commission-sponsored studies on synthetic turf are planned. However, should new information become available indicating a hazard under applicable statutes, staff would recommend to the Commission a reconsideration of this issue.

In addition, staff supported the development of a voluntary standard that would keep lead out of synthetic turf products. In July 2009, ASTM International published voluntary standard, ASTM F2765-09, *Standard Specification for Total Lead Content in Synthetic Turf Fibers*. This standard limits the lead content of the synthetic turf "grass blades" to no more than 300 mg/kg. This standard will reduce the use of lead-containing materials in synthetic turf products no matter where they are installed regardless of the ages of the intended users.

Under the CPSC's Information Quality guidelines found at: http://www.cpsc.gov/Research--Statistics/Information-Quality-Guidelines/, you have the right to submit an appeal to the Office of the Executive Director within 30 calendar days of receipt of this letter. Please see the procedures for appeal described in the above Web link.

Sincerely,

DeWane Ray
Assistant Executive Director
Office of Hazard Identification and Reduction

IQ·13·1

PEER
Public Employees for Environmental Responsibility
2000 P Street, NW • Suite 240 • Washington, D.C. 20036 • 202-265-PEER(7337) • fax: 202-265-4192
e-mail: info@peer.org • website: www.peer.org

March 21, 2013

Todd Stevenson
Office of the Secretary
Consumer Product Safety Commission
Washington, D.C. 20207

Re: Demand for Correction of Information under the Information Quality Act: Synthetic Turf Report

Dear Mr. Stevenson,

Public Employees for Environmental Responsibility (PEER) hereby submits this Complaint seeking Correction under the Information Quality Act (IQA) of 2000,[1] the Office of Management and Budget (OMB) Guidelines for Ensuring and Maximizing the Quality, Utility, and Integrity of Information disseminated by Federal Agencies (OMB Guidelines),[2] and the Consumer Product Safety Commission (CPSC) Information Quality Guidelines.[3]

PEER respectfully submits this complaint demanding that the CPSC rescind and correct online printed information regarding the safety of artificial turf, including the 2008 report, "CPSC Staff Analysis and Assessment of Synthetic Turf 'Grass Blades'" (Report) and accompanying press release "CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On" (Press Release) on the basis that they do not comport with the CPSC's standards of objectivity.

CPSC staff concluded in this Report that the lead found on the surface of the fields, in the synthetic turf blades, would lead to no cases in which "the estimated exposure for children playing on [a synthetic turf] field would exceed 15μ per deciliter of blood.[4] The highest level of

[1] Treasury and General Government Appropriations Act, Pub. L. No. 106-554, §515 (Fiscal Year 2001).
[2] Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, Republication, 67 Fed. Reg. 8452 (Feb. 22, 2002).
[3] CONSUMER PRODUCT SAFETY COMMISSION, INFORMATION QUALITY GUIDELINES, *available at* http://www.cpsc.gov/en/Research--Statistics/Information-Quality-Guidelines/; 44 U.S.C. § 3516(b)(2)(B), note.
[4] CONSUMER PRODUCT SAFETY COMMISSION, CPSC STAFF ANALYSIS AND ASSESSMENT OF SYNTHETIC TURF "GRASS BLADES", CONSUMER PRODUCT SAFETY COMMISSION 4, *available at* http://www.cpsc.gov/PageFiles/104716/turfassessment.pdf (*quoting* 16 C.F.R. § 1500.230. Codified Guidance Policy for Lead in Consumer Products (63 FR 70648; December 22, 1998)). The CPSC recognizes a level of 10μ of lead per deciliter of blood as a level of concern with respect to lead poisoning. *Id.*

estimated daily lead ingestion was from a nine-year old, now removed, synthetic turf field, which showed an average of 6.8μ of lead contained in the turf blade.[5]

PEER CHALLENGES THE FOLLOWING INFORMATION IN THE 2008 REPORT AND ACCOMPANYING PRESS RELEASE REGARDING ARTIFICIAL TURF.

The CPSC Information Quality Guidelines state that "CPSC disseminates information in a number of ways, including. . . [p]ress releases and video news releases" and "[s]pecial technical reports."[6] CPSC states that the media, the public, and other government agencies, use their guidelines to "reduce the risk of product-related death and injuries."[7] With the large number of persons relying upon CPSC disseminated information, flawed or incorrect information may have disastrous consequences. PEER seeks to challenge the objectivity of such disseminations of flawed information related to artificial turf, released in July of 2008.

ERRONEOUS INFORMATION ENDANGERS PUBLIC HEALTH.

CPSC's Press Release, dated July 30, 2008,[8] and the cited Report conclude, "that young children are not at risk from exposure to lead in these fields." The headline of this press release reads, "CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On." Together these statements lead the public to believe that the testing performed by the CPSC was thorough and rigorous, and that its conclusions are scientifically sound.

As discussed below, CPSC's study upon which the Report and Press Release are based was cursory and flawed, and should not be reasonably expected to support such a statement.[9] Primarily, the CPSC's statement that artificial turf is "OK to install, OK to play on" and the conclusion that children are not at risk from lead exposure from the artificial turf fields is an overbroad conclusion in light of the limitations of the study detailed below. By making these conclusions the CPSC gives the green light to communities to install and use these fields. This could lead to increased lead and other toxin exposure in children.

According to the Centers for Disease Control and Prevention ("CDC"), even low blood lead levels ("BLL") in children "are associated with IQ deficits, attention-related behaviors, and

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[5] CONSUMER PRODUCT SAFETY COMMISSION, CPSC STAFF ANALYSIS AND ASSESSMENT OF SYNTHETIC TURF "GRASS BLADES", CONSUMER PRODUCT SAFETY COMMISSION 5, *available at* http://www.cpsc.gov/PageFiles/104716/turfassessment.pdf.

[6] CONSUMER PRODUCT SAFETY COMMISSION, INFORMATION QUALITY GUIDELINES, *available at* http://www.cpsc.gov/en/Research--Statistics/Information-Quality-Guidelines/.

[7] CONSUMER PRODUCT SAFETY COMMISSION, INFORMATION QUALITY GUIDELINES, *available at* http://www.cpsc.gov/en/Research--Statistics/Information-Quality-Guidelines/.,

[8] Press Release, Consumer Product Safety Commission, CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On (July 30, 2008) *available at* http://www.cpsc.gov/en/Newsroom/News-Releases/2008/CPSC-Staff-Finds-Synthetic-Turf-Fields-OK-to-Install-OK-to-Play-On/ (last visited Jan. 29, 2013).

[9] CONSUMER PRODUCT SAFETY COMMISSION, CPSC STAFF ANALYSIS AND ASSESSMENT OF SYNTHETIC TURF "GRASS BLADES", CONSUMER PRODUCT SAFETY COMMISSION, *available at* http://www.cpsc.gov/PageFiles/104716/turfassessment.pdf.

poor academic achievement."[10] The CDC continues, "[t]he absence of an identified BLL without deleterious effects, combined with the evidence that these effects appear to be irreversible, underscores the critical importance of primary prevention," indicating that lead is considered dangerous at all levels.[11]

Many artificial turf fields have been shown to exceed even CPSC's own lead standard of 100 ppm for children's products.[12] Nonetheless, the CPSC's Report and Press Release are being touted by the artificial turf industry as a "clean bill of health," giving consumers the false impression that the CPSC study was thorough and conclusive.[13]

Not only does the CPSC's declaration that artificial turf is safe potentially lead to increased lead exposures, but it could also increase exposures to other chemicals present in the both the plastic blades and in the tire crumb that makes up the infill in artificial turf. The U.S. Environmental Protection Agency ("EPA") has listed as possibly present in tire crumb pieces the following chemicals: acetone, aniline, arsenic, barium, benzene, benzothiazole, cadmium, chloroethan, chromium, cobalt, copper, halogenated flame retardants, isoprene, latex, manganese, mercury, methyl ethyl ketone, methyle isobutyl ketone, naphthalene, nickel, nylon, phenol, pigments, polycyclic aromatic hydrocarbons, polyester, rayon, styrene – butadiene, toluene, trichloroethylene.[14]

Regardless of the limits of CPSC's statutory mandate, given the numerous studies showing the presence of such chemicals in tires, and the actual presence of lead on the plastic rugs it is simply incorrect to declare these fields "OK to install, OK to play on."

CHALLENGED INFORMATION IS INFLUENTIAL WITHIN MEANING OF IQA

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[10] CDC RESPONSE TO ADVISORY COMMITTEE ON CHILDHOOD LEAD POISONING PREVENTION RECOMMENDATIONS IN "LOW LEVEL LEAD EXPOSURE HARMS CHILDREN: A RENEWED CALL OF PRIMARY PREVENTION", CENTER FOR DISEASE CONTROL AND SAFETY 2 (June 7, 2012), *available at* http://www.cdc.gov/nceh/lead/ACCLPP/CDC_Response_Lead_Exposure_Recs.pdf.

[11] CDC RESPONSE TO ADVISORY COMMITTEE ON CHILDHOOD LEAD POISONING PREVENTION RECOMMENDATIONS IN "LOW LEVEL LEAD EXPOSURE HARMS CHILDREN: A RENEWED CALL OF PRIMARY PREVENTION", CENTER FOR DISEASE CONTROL AND SAFETY 2 (June 7, 2012), *available at* http://www.cdc.gov/nceh/lead/ACCLPP/CDC_Response_Lead_Exposure_Recs.pdf.

[12] Van Ulirsch & Gleason, et al., *Evaluating and Regulating Lead in Synthetic Turf*, 118 ENVIRON. HEALTH PERSPECT. 1345, 1347 (2010), *available at* http://dx.doi.org/10.1289/ehp.1002239 (finding that "Twelve of 29 actively used synthetic surfaces and two of four new turf products tested exceeded the statutory lead limit of 300 mg/kg for consumer products intended for use by children").

[13] SYNTHETIC TURF SAFETY PROVEN BY SCIENCE, FIELDTURF 3, *available at* http://www.fieldturf.com/media/BAhbBlsHOgZmSSJEMjAxMi8wOC8wMS8yMi8yNy81MS82NS9GaWVsZFR1cmZfU2FmZXR5X1Byb3Zlbl9XaXRoX1NjaWVuY2UucGRmBjoGRVQ/FieldTurf_Safety_Proven_With_Science.pdf.

[14] *The Use of Recycled Tire Materials on Playgrounds & Artificial Turf Fields*, ENVIRONMENTAL PROTECTION AGENCY (Dec. 3, 2009), *available at* http://www.epa.gov/nerl/features/tire_crumbs.html (listing a number of chemicals that may be found in tires). *See also* DAVID R. BROWN, ENVIRONMENT AND HUMAN HEALTH, INC., ARTIFICIAL TURF 8-10 (2007), *available at* http://www.ehhi.org/reports/turf/turf_report07.pdf.

The CPSC says that the data they typically produce does not have a clear and substantial impact on important public policy or important private sector decisions.[15] However, in the case of artificial turf installation and use, the industry and its consumers are touting the CPSC's Report[16] and Press Release[17] as a clean bill of health,[18] without recognizing the limitations of the study.

The Synthetic Turf Council cites the CPSC study as "credible research" and uses it to validate the safety of synthetic tuft.[19] In their frequently asked questions, they say that the CPSC Report has approved the use of synthetic turf for children and "people of all ages."[20] They also say that any concerns over lead levels in synthetic turf were "resolved" when the CPSC released the results of their study, declaring that "young children are not at risk from exposure to lead in these fields."[21]

Many communities have also relied on the CPSC Report to decide whether to install synthetic turf on athletic fields. For example, in Washington State, the community of Woodinville specifically cites the CPSC Report and Press Release in a "Report to the City Council" discussing whether to install synthetic turf on their athletic fields.[22] Montgomery County, Maryland, also conducted a study analyzing different publications regarding the safety

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[15] CONSUMER PRODUCT SAFETY COMMISSION, INFORMATION QUALITY GUIDELINES, *available at* http://www.cpsc.gov/en/Research--Statistics/Information-Quality-Guidelines/.

[16] CONSUMER PRODUCT SAFETY COMMISSION, CPSC STAFF ANALYSIS AND ASSESSMENT OF SYNTHETIC TURF "GRASS BLADES", CONSUMER PRODUCT SAFETY COMMISSION, *available at* http://www.cpsc.gov/PageFiles/104716/turfassessment.pdf.

[17] Press Release, Consumer Product Safety Commission, CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On (July 30, 2008) *available at* http://www.cpsc.gov/en/Newsroom/News-Releases/2008/CPSC-Staff-Finds-Synthetic-Turf-Fields-OK-to-Install-OK-to-Play-On/ (last visited Jan. 29, 2013).

[18] *Field Turf Applauds 'Clean Bill of Health' Given to Synthetic Athletic Fields by U.S. Consumer Product Safety Commission*, GLOBAL NEWSWIRE (July 30, 2008, 4:40 PM), available at http://globenewswire.com/news-release/2008/07/30/382315/147522/en/FieldTurf-Applauds-Clean-Bill-of-Health-Given-to-Synthetic-Athletic-Fields-by-U-S-Consumer-Product-Safety-Commission.html.

[19] *FAQs: Is synthetic turf safe?*, SYNTHETIC TURF COUNCIL, *available at* http://www.syntheticturfcouncil.org/displaycommon.cfm?an=1&subarticlenbr=209#health (last visited Jan. 20, 2013).

[20] *FAQs: Is synthetic turf safe?*, SYNTHETIC TURF COUNCIL, *available at* http://www.syntheticturfcouncil.org/displaycommon.cfm?an=1&subarticlenbr=209#health (last visited Jan. 20, 2013).

[21] *FAQs: Should I be concerned about lead in my field?*, SYNTHETIC TURF COUNCIL, *available at* http://www.syntheticturfcouncil.org/displaycommon.cfm?an=1&subarticlenbr=209#health (last visited Jan. 20, 2013).

[22] CITY OF WOODINVILLE, REPORT TO THE CITY COUNCIL: DISCUSSION OF HEALTH ISSUES AND SYNTHETIC TURF 4-11 (Oct. 6, 2009), *available at* http://woodinville.granicus.com/MetaViewer.php?meta_id=34656&view=&showpdf=1 (declaring that the CPSC study is one of the three most pertinent and authoritative information sources available regarding synthetic turf safety).

of synthetic turf when deciding whether to install synthetic turf in their athletic fields.[23] In their findings, the report stated that Montgomery County Schools and other county departments "believe that reliance should be placed on the various government studies referenced above that have looked at the human health issues associated with artificial turf fields (and crumb rubber infill in particular) and have not found levels of concern that warrant avoidance of the construction of new artificial turf fields with crumb rubber infill."[24]

Because communities may exclusively rely on government-disseminated data, the CPSC Report is extremely influential and should contain complete, reliable and objective information.

THE CHALLENGED STATEMENTS SHOULD BE RETRACTED BECAUSE THEY VIOLATE CPSC GUIDELINES FOR INFORMATION QUALITY.

(A) Objectivity

The CPSC's guidelines state that information disseminated by the agency should be objective.[25] The guidelines define objectivity as the use of reliable data sources, use of sound analytic techniques, review prior to dissemination, a policy for correcting errors, and revising previously disseminated information.[26] The information released by the CPSC regarding the safety of artificial turf does not satisfy the CPSC's requirement of objectivity as described in the CPSC's guidelines for information quality.[27] Specifically, the Report does not use reliable data sources, it does not use sound analytic techniques, has no clear policy for correcting the errors in the study as they stood or in light of new reliable data from elsewhere. The Report also did not revise previously disseminated information in light of needed corrections and newly acquired data.

1. The Report does not use reliable data sources.

The Report is based on a study which uses very limited samples, only eight fields out of about 3,500 located around the country.[28] As stated in the Report, "Staff obtained samples of turf that had been left over after installation or that became available when a field was

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[23] MONTGOMERY COUNTY SCHOOLS ET AL., A REVIEW OF THE BENEFITS AND ISSUES ASSOCIATED WITH NATURAL GRASS AND ARTIFICIAL TURF RECTANGULAR STADIUM FIELDS, *available at* http://www6.montgomerycountymd.gov/content/council/ATworkgroup/atreportfinal.pdf (last visited Jan. 30, 2013).
[24] MONTGOMERY COUNTY SCHOOLS ET AL., A REVIEW OF THE BENEFITS AND ISSUES ASSOCIATED WITH NATURAL GRASS AND ARTIFICIAL TURF RECTANGULAR STADIUM FIELDS 41, *available at* http://www6.montgomerycountymd.gov/content/council/ATworkgroup/atreportfinal.pdf (last visited Jan. 30, 2013).
[25] CONSUMER PRODUCT SAFETY COMMISSION, INFORMATION QUALITY GUIDELINES, *available at* http://www.cpsc.gov/en/Research--Statistics/Information-Quality-Guidelines/.
[26] CONSUMER PRODUCT SAFETY COMMISSION, INFORMATION QUALITY GUIDELINES, *available at* http://www.cpsc.gov/en/Research--Statistics/Information-Quality-Guidelines/.
[27] CONSUMER PRODUCT SAFETY COMMISSION, INFORMATION QUALITY GUIDELINES, *available at* http://www.cpsc.gov/en/Research--Statistics/Information-Quality-Guidelines/.
[28] *Federal Agencies at odds over artificial turf recommendations*, CONSUMER REPORTS (Sept. 5, 2008, 11:56 AM), available at http://news.consumerreports.org/safety/2008/09/lead-in-turf.html.

dismantled. Staff also visited in-service synthetic turf fields. . ."[29] It appears from Table 1 that only five in-use, outdoor fields were tested, the rest either were unused samples (6), samples from an indoor field (1), and samples from brand new fields (2). Of those outdoor fields that had been in use, three had been in use for four years or less. The field that had been in use for the longest had the highest levels of lead (an average of 68.1 μg) yet the Press Release inappropriately minimizes this important finding, stating:

> As turf is used during athletics or play and exposed over time to sunlight, heat and other weather conditions, the surface of the turf may start to become worn and small particles of the lead-containing synthetic grass fibers might be released. The staff considered in the evaluation that particles on a child's hand transferred to his/her mouth would be the most likely route of exposure and *determined young children would not be at risk.* (Emphasis added).[30]

The data clearly shows a difference in not only age of the field with relation to the presence of lead, but also in relation to the location of the field (indoor versus outdoor), and the color of the grass blades (yellow versus green, etc.).[31] While the limited sample size does not allow for conclusive statements generalized to all artificial fields, the results directly contradict statements such as "CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On."[32]

In addition to the limited number of samples, the study does not provide information on how samples were selected.[33] This study also lacks information regarding whether the same company manufactured all the samples or if different companies were used. This is important information for consumers particularly regarding fields that showed elevated lead levels.[34]

2. The Report does not use sound analytical techniques.

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[29] CONSUMER PRODUCT SAFETY COMMISSION, INFORMATION QUALITY GUIDELINES, *available at* http://www.cpsc.gov/en/Research--Statistics/Information-Quality-Guidelines/.

[30] Press Release, Consumer Product Safety Commission, CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On (July 30, 2008) *available at* http://www.cpsc.gov/en/Newsroom/News-Releases/2008/CPSC-Staff-Finds-Synthetic-Turf-Fields-OK-to-Install-OK-to-Play-On/ (last visited Jan. 29, 2013).

[31] CONSUMER PRODUCT SAFETY COMMISSION, CPSC STAFF ANALYSIS AND ASSESSMENT OF SYNTHETIC TURF "GRASS BLADES", CONSUMER PRODUCT SAFETY COMMISSION table 1, *available at* http://www.cpsc.gov/PageFiles/104716/turfassessment.pdf.

[32] Press Release, Consumer Product Safety Commission, CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On (July 30, 2008) *available at* http://www.cpsc.gov/en/Newsroom/News-Releases/2008/CPSC-Staff-Finds-Synthetic-Turf-Fields-OK-to-Install-OK-to-Play-On/ (last visited Jan. 29, 2013).

[33] CONSUMER PRODUCT SAFETY COMMISSION, CPSC STAFF ANALYSIS AND ASSESSMENT OF SYNTHETIC TURF "GRASS BLADES", CONSUMER PRODUCT SAFETY COMMISSION table 1, *available at* http://www.cpsc.gov/PageFiles/104716/turfassessment.pdf.

[34] According to Van Ulirsch & Gleason, et al. *Evaluating and Regulating Lead in Synthetic Turf*, 118 ENVIRON. HEALTH PERSPECT. 1345, 1347 (2010), *available at* http://dx.doi.org/10.1289/ehp.1002239 the CPSC study used four different manufacturers' turf but that is not cited in the CPSC study.

The CPSC only tested the grass blades for lead without testing for other toxics, including those that are of concern for children; in particular, toxins such as cadmium and phthalates are required to be tested for in children's products. The CPSC also did not test the tire crumb infill.[35] Many consumers are concerned about the tire crumb infill,[36] which has been shown to contain various chemicals[37] and the conclusion that artificial turf is "...OK to Install, OK to Play On" cannot be supported unless all parts of the product are thoroughly tested for all the toxins that are often known to be or are likely to be in the product.

In addition, even for lead exposure the study authors made a number of questionable assumptions. First they ignored pathways to exposure other than ingestion. They hypothetically modeled for indirect ingestion. They did not test for inhalation or trans-dermal absorption, other known routes for metals to enter the body.[38]

In a 2011 New Jersey study that tested for exposure to lead through inhalation from artificial turf the authors posited that field activity (running, playing, etc.) would suspend particles and contaminants (including lead) and increase the risks of exposure through inhalation.[39] This study cautions that:

> While it is not possible to draw broad conclusions from this limited sample of fields the results suggest that there is a potential for inhalable lead to be present on turf fields that have significant amounts of lead present as detectable by surface wipes. It also would appear likely from this sample that if the lead is present to any appreciable extent in the wipes it will

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[35] Press Release, Connecticut Attorney General's Office, Attorney General Calls Synthetic Turf Study Dangerously Deceptive, Urges Its Removal and Revision (Aug 18, 2008), *available at* http:/www.ct.gov/ag/cwp/view.asp?Q=421480&A=2795. *See also Federal Agencies at odds over artificial turf recommendations*, CONSUMER REPORTS (Sept. 5, 2008, 11:56 AM), available at http://news.consumerreports.org/safety/2008/09/lead-in-turf.html (finding the study inadequate as it was limited to only "grass blades" and not "crumb rubber."

[36] *See* WISCONSIN DEPARTMENT OF HEALTH SERVICES, RECYCLED RUBBER PLAYGROUND COVER, "The Wisconsin Department of Health Services has received a number of questions from parents regarding the safety of recycled rubber on playgrounds." *Id*; *See also* Julie Deardorff, *Synthetic Playing Fields, Experts to discuss safety*, THE CHICAGO TRIBUNE (Mar. 18, 2011), *available at* http://articles.chicagotribune.com/2011-03-18/features/chi-artificial-turf-experts-to-discuss-safety-20110318_1_artificial-turf-tire-crumb-crumb-rubber (writing, "Though the [tire infill] looks pristine and requires little maintenance, some worry that athletes playing on these fields may be exposed to chemicals that may pose health risks").

[37] *The Use of Recycled Tire Materials on Playgrounds & Artificial Turf Fields*, ENVIRONMENTAL PROTECTION AGENCY (Dec. 3, 2009), *available at* http://www.epa.gov/nerl/features/tire_crumbs.html (listing a number of chemicals that may be found in tires).

[38] STUART L. SHALAT, FINAL REPORT: AN EVALUATION OF POTENTIAL EXPOSURES TO LEAD AND OTHER METALS AS THE RESULT OF AEROSOLIZED PARTICULATE MATTER FROM ARTIFICIAL TURF PLAYING FIELDS 9 (July 16, 2011), *available at* http://www.nj.gov/dep/dsr/publications/artificial-turf-report.pdf.

[39] STUART L. SHALAT, FINAL REPORT, AN EVALUATION OF POTENTIAL EXPOSURES TO LEAD AND OTHER METALS AS THE RESULT OF AEROSOLIZED PARTICULATE MATTER FROM ARTIFICIAL TURF PLAYING FIELDS 2 (July 16, 2011), *available at* http://www.nj.gov/dep/dsr/publications/artificial-turf-report.pdf.

likely be present in the breathing zone of players who are active on these fields, and that furthermore, these levels potentially exceed ambient EPA standards.[40]

The fact that inhalation exposure was not assessed by the CPSC underscores the inappropriateness of the declaration that artificial turf is "OK to install, OK to play on."[41] In the words of the New Jersey study, "only a comprehensive mandated testing of fields can provide assurance that no health hazard on these fields exists from lead or other metals used in their construction and maintenance."[42]

The assumptions made in modeling also assume that blood lead levels below 15 ug/L are safe. The current lead-health standards do not support this endpoint for modeling.

There was also a lack of testing of older fields. Only two samples were from fields older than five years.[43] The oldest field tested was installed in 1999 and was associated with the highest daily estimated ingestion of lead.[44] Yet, according to the CPSC's own findings, older fields need to be further evaluated for safety:

> Our findings and those presented in the CPSC study indicate that synthetic turf can deteriorate over time to form dust containing lead at levels that may pose a risk to children who play on these surfaces.[45]

In fact, older fields have already been be shut down due to elevated lead levels.[46] At the very least, CPSC should indicate that older fields need continuous monitoring for the presence of lead on the surface.

The CPSC study also only tested for lead and not for other harmful contaminants. The presence of these chemicals and their uncertain impacts on children is one reason why CPSC

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[40] STUART L. SHALAT, FINAL REPORT, AN EVALUATION OF POTENTIAL EXPOSURES TO LEAD AND OTHER METALS AS THE RESULT OF AEROSOLIZED PARTICULATE MATTER FROM ARTIFICIAL TURF PLAYING FIELDS 9 (July 16, 2011), *available at* http://www.nj.gov/dep/dsr/publications/artificial-turf-report.pdf.

[41] Press Release, Consumer Product Safety Commission, CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On (July 30, 2008) *available at* http://www.cpsc.gov/en/Newsroom/News-Releases/2008/CPSC-Staff-Finds-Synthetic-Turf-Fields-OK-to-Install-OK-to-Play-On/ (last visited Jan. 29, 2013).

[42] STUART L. SHALAT, FINAL REPORT, AN EVALUATION OF POTENTIAL EXPOSURES TO LEAD AND OTHER METALS AS THE RESULT OF AEROSOLIZED PARTICULATE MATTER FROM ARTIFICIAL TURF PLAYING FIELDS 10 (July 16, 2011), *available at* http://www.nj.gov/dep/dsr/publications/artificial-turf-report.pdf.

[43] *Federal Agencies at odds over artificial turf recommendations*, CONSUMER REPORTS (Sept. 5, 2008, 11:56 AM), available at http://news.consumerreports.org/safety/2008/09/lead-in-turf.html.

[44] *Federal Agencies at odds over artificial turf recommendations*, CONSUMER REPORTS (Sept. 5, 2008, 11:56 AM), available at http://news.consumerreports.org/safety/2008/09/lead-in-turf.html.

[45] Van Ulirsch & Gleason, et al. *Evaluating and Regulating Lead in Synthetic Turf*, 118 ENVIRON. HEALTH PERSPECT. 1345, 1347 (2010), *available at* http://dx.doi.org/10.1289/ehp.1002239.

[46] *UNH Field Closed Due to High Lead Levels*, CBS BOSTON (Oct. 21, 2012, 10:12 AM), available at http://boston.cbslocal.com/2012/10/21/unh-field-closed-due-to-high-lead-levels/.

should not have given a blanket declaration that these fields are safe to install or for children to play on. A partial list of these chemicals and their effects include:

- 1, 3-butadient, a known human carcinogen. It affects the skin, ocular, and nervous systems.[47]
- Benzene, a known human carcinogen. It affects the hematological, immune, and neurological systems.[48]
- Phthalates, these toxicants consist of a number of different chemicals, which can be damaging to the reproductive system, the developing organs, and the liver.[49]
- Polycyclic Aromatic Hydrocarbons (PAHs), these affect the skin, liver, and immune systems.[50] They are also carcinogenic.[51]
- Manganese, this affects the cardiovascular, liver, nervous, and the respiratory systems.[52]
- Carbon Black,[53] these particles can irritate the lungs and potentially result in lung disease. The particles can also irritate the eyes, nose, and throat eventually leading to a chronic condition called "obstructive pulmonary disease" and has been identified as a carcinogen in animals and a possible carcinogen in humans.[54]

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[47] *1, 3-Butadien*, CDC: AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=81 (last visited Feb. 5, 2013).

[48] *Benzene*, CDC: AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=14 (last visited Feb. 5, 2013).

[49] *Phthalates*, CDC: AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, http://www.atsdr.cdc.gov/substances/toxchemicallisting.asp?sysid=41 (last visited Feb. 5, 2013).

[50] *Polycyclic Aromatic Hydrocarbons ("PAHs")*, CDC: AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=25 (last visited Feb. 6, 2013). *See also* Edoardo Menichini et al., *Artificial-turf playing fields: Contents of metals, PAHs, PCBs, PCDDs and PCDFs, inhalation exposure to PAHs and related risk assessment*, 409 SCI. OF THE TOTAL ENVIRON. 4950 (2011) (finding that metals, PAHs, PCBs, PCDDs and PCDFs in rubber used in artificial playing fields and inhalation exposure to PAHs. Zinc and BaP concentrations are high in rubber largely exceeding the Italian soil standards).

[51] *See* Maria Llompart, et al., *Hazardous Organic Chemicals in Rubber Recycled Tire Playgrounds and Pavers*, 90 CHEMOSPHERE 423-31 (2013). It is well known that rubber tire debris contains toxic compounds such as highly aromatic oils and other reactive additives...Tire rubber is composed of 40-60% rubber polymer, reinforcing agents such as carbon black (20-35%), aromatic extender oil (up to 28%), vulcanization additives, antioxidants, antiozonants, and processing aids (plasticizers and softeners)...One of the main components of extender oil is highly aromatic oil, which contains polycyclic aromatic hydrocarbons (PAHs) in the range of 300-700 mg kg^{-1}. *Id.*

[52] *Manganese*, CDC: AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=23 (last visited Feb. 6, 2013).

[53] *Carbon Black*, NIOSH PUBLICATIONS AND PRODUCTS, http://www.cdc.gov/niosh/idlh/1333864.HTML (last visited Feb. 6, 2013). "The that the dispersion of ultrafine carbon black nanoparticles in the lungs of rats following intratracheal instillation results in an inflammatory response that is greater than agglomerated ultrafine carbon black." *Id.*

[54] *Occupational Safety and Health Guideline for Carbon Black: Potential Human Carcinogen*, CENTERS OF DISEASE CONTROL AND PREVENTION, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (1988), *available at* http://www.cdc.gov/niosh/docs/81-123/pdfs/0102.pdf; *Carbon Black*, U.S. DEPARTMENT OF LABOR (Nov. 10, 2012), *available at* http://www.osha.gov/dts/chemicalsampling/data/CH_225300.html; *Final Report: Comparison of the Carcinogenicity of Diesel Exhaust and Carbon Black in Rat Lungs*, ENVIRONMENTAL PROTECTION AGENCY, http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/5342/report/0 (last visited Mar. 5, 2013).

- Carbon Black nanoparticles, these are potential occupational carcinogens when in the presence of PAHs.[55]
- Latex, this is a known allergen.[56]
- Zinc, this can affect the digestive system, the ability for blood to form, and the respiratory system.[57] It is also highly toxic to aquatic organisms and inhibits the growth of plants when it leaches into water and soil.[58]

In addition to the above listed toxicants, a Connecticut Agricultural Experiment Station Study recently found that the following toxicants were present in tire crumbs:[59]

- Benziothiazole, this toxicant can cause skin and eye irritation and it is harmful if swallowed.[60]
- Butylated hydroxyanisole, this is a recognized carcinogen, a suspected endocrine toxicant, a gastrointestinal toxicant, an immunotoxicant, a neurotoxicant, and a skin and sense organ toxicant.[61]
- n-hexadecane, this is known to be a severe irritant based on human and animal studies.[62]
- 4-(t-octyl) phenol, this is known to be corrosive and destructive to mucous membranes.[63]

3. The CPSC's conclusions are not supported by the Reports' findings.

The fact is that lead has been found in numerous artificial turf fields all over the country, in various amounts.[64] Some of these amounts comply with standards issued by the CPSC, but many do not.[65] One 2010 study concluded that:

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[55] FILLING THE KNOWLEDGE GAPS FOR SAFE NANOTECHNOLOGY IN THE WORKPLACE, NIOSH NANOTECHNOLOGY RESEARCH CENTER vi (2004-2011), *available at* http://www.cdc.gov/niosh/docs/2013-101/pdfs/2013-101.pdf.
[56] Latex Allergy: A Prevention Guide, NIOSH PUBLICATIONS AND PRODUCTS, http://www.cdc.gov/niosh/docs/98-113/ (last visited Feb. 6, 2013).
[57] *Zinc*, CDC: AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=54 (last visited Feb. 6, 2013).
[58] *Inorganics*, ENVRIONMENTAL PROTECTION AGENCY (Dec. 28, 2011), *available at* http://www.epa.gov/R5Super/ecology/toxprofiles.htm#zn.
[59] MaryJane Incorvia Mattina, et al., The Connecticut Agricultural Experiment Station, Examination of Crumb Rubber Produced from Recycled Tires,
[60] *Artificial Turf: Exposures to Ground up Rubber Tires – Athletic Fields, Playgrounds, Garden Mulch*, ENVIRONMENT AND HUMAN HEALTH, INC., http://www.ehhi.org/reports/turf/health_effects.shtml (last visited Feb. 6, 2013).
[61] *Artificial Turf: Exposures to Ground up Rubber Tires – Athletic Fields, Playgrounds, Garden Mulch*, ENVIRONMENT AND HUMAN HEALTH, INC., http://www.ehhi.org/reports/turf/health_effects.shtml (last visited Feb. 6, 2013).
[62] *Artificial Turf: Exposures to Ground up Rubber Tires – Athletic Fields, Playgrounds, Garden Mulch*, ENVIRONMENT AND HUMAN HEALTH, INC., http://www.ehhi.org/reports/turf/health_effects.shtml (last visited Feb. 6, 2013).
[63] *Artificial Turf: Exposures to Ground up Rubber Tires – Athletic Fields, Playgrounds, Garden Mulch*, ENVIRONMENT AND HUMAN HEALTH, INC., http://www.ehhi.org/reports/turf/health_effects.shtml (last visited Feb. 6, 2013).

> Twelve of 29 actively used synthetic surfaces and two of four new turf products tested exceeded the statutory lead limit of 300 mg/kg for consumer products intended for use by children [Consumer Product Safety Improvement Act]. . . and the U.S. EPA lead hazard standard of 400 mg/kg for residential soil. . .[66]

Currently, the CPSC lead standard is 300 mg/kg[67] but is 100 mg/kg for children's products. This lower standard for children's products suggests that the amount of noncompliance in artificial turf is even higher.[68]

Regardless of which CPSC lead standard is used, the Report does not justify a blithe conclusion that turf is "OK to install, OK to play on."[69] Indeed, the CPSC Report and accompanying Press Release may have the effect of encouraging a lack of compliance.

THE CPSC'S INFORMATION SHOULD BE CORRECTED IN THE FOLLOWING WAYS:

(a) Remove all materials from the website (including the Report,[70] the Press Release,[71] and the accompanying video[72]), particularly the reassurance that fields are "OK to install, OK to play on";

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[64] Van Ulirsch & Gleason, et al. *Evaluating and Regulating Lead in Synthetic Turf*, 118 ENVIRON. HEALTH PERSPECT. 1345, 1346 (2010), *available at* http://dx.doi.org/10.1289/ehp.1002239.

[65] Van Ulirsch & Gleason, et al. *Evaluating and Regulating Lead in Synthetic Turf*, 118 ENVIRON. HEALTH PERSPECT. 1345, 1347 (2010), *available at* http://dx.doi.org/10.1289/ehp.1002239.

[66] Van Ulirsch & Gleason, et al. *Evaluating and Regulating Lead in Synthetic Turf*, 118 ENVIRON. HEALTH PERSPECT. 1345, 1346 (2010), *available at* http://dx.doi.org/10.1289/ehp.1002239.

[67] 15 U.S.C. 1278(a). "Beginning on the date that is 1 year after August 14, 2008, the lead limit referred to in paragraph (1) is 300 parts per million total lead content by weight for any part of the product." *Id.*

[68] 15 U.S.C. 1278(a) "Beginning on the date that is 3 years after August 14, 2008, subparagraph (B) shall be applied by substituting "100 parts per million" for "300 parts per million" unless the Commission determines that a limit of 100 parts per million is not technologically feasible for a product or product category. The Commission may make such a determination only after notice and a hearing and after analyzing the public health protections associated with substantially reducing lead in children's products." *Id.*

[69] Press Release, Consumer Product Safety Commission, CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On (July 30, 2008) *available at* http://www.cpsc.gov/en/Newsroom/News-Releases/2008/CPSC-Staff-Finds-Synthetic-Turf-Fields-OK-to-Install-OK-to-Play-On/ (last visited Jan. 29, 2013).

[70] CONSUMER PRODUCT SAFETY COMMISSION, CPSC STAFF ANALYSIS AND ASSESSMENT OF SYNTHETIC TURF "GRASS BLADES", CONSUMER PRODUCT SAFETY COMMISSION, *available at* http://www.cpsc.gov/PageFiles/104716/turfassessment.pdf.

[71] Press Release, Consumer Product Safety Commission, CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On (July 30, 2008) *available at* http://www.cpsc.gov/en/Newsroom/News-Releases/2008/CPSC-Staff-Finds-Synthetic-Turf-Fields-OK-to-Install-OK-to-Play-On/ (last visited Jan. 29, 2013).

[72] *CPSC Staff Finds Synthetic Turf Fields OK to Install, OK to Play On: Accompanying video*, Consumer Product Safety Commission (July 30, 2008), *available at* http://www.cpsc.gov/en/Newsroom/News-Releases/2008/CPSC-Staff-Finds-Synthetic-Turf-Fields-OK-to-Install-OK-to-Play-On/ (last visited Jan. 29, 2013).

(b) Disseminate warnings regarding the unknown risks of lead exposure from artificial turf, as well as exposure to other chemicals and contaminants; and

(c) Commission an independent study that tests a large sample of older and newer fields, indoor and outdoor fields, all parts of the field, different exposure pathways, and different contaminants.

If the CPSC will not perform a new study, the conclusions drawn from the current study should be drastically revised. First, the CPSC should no longer refer to artificial turf as safe or "OK to install, OK to play on." Second, attention needs to be drawn to the finding that older fields result in higher lead releases due to weathering. Third, all fields should be tested for lead content upon purchase, and fields that test positive for lead should not be installed. Existing fields should be comprehensively tested for the presence of lead, and if lead is found in the blades of any of the colors, should be monitored yearly for surface lead. If lead is found, the field should be removed. Finally, the limitations of the study should be stated clearly in all locations where the study is referenced, including the lack of testing of dermal exposure and inhalation, limited sample size, lack of analysis of other carpet contaminants and lack of any analysis of the tire crumb or other infill. In addition, given that the total composition of and potential toxins in the tire crumb in particular is unknown and unknowable (since the tire crumb infill source is unknown and many tire ingredients are proprietary) tire crumb infills are not amenable to safety testing. Each batch of tire crumb for each field would be different. Tire crumb should be banned for applications where human contact is expected. Stringent monitoring, testing, and source information and ingredient guidelines should be developed for any synthetic turf field infill.

Valid conclusions from the current study must be rewritten to communicate that lead was indeed found on artificial turf fields, and given the limited scope of the study those installing and playing on the fields should always exercise caution.

Conclusion.

Based on the forgoing information, CPSC should rescind and correct its online and printed information declaring artificial turf to be "OK to install, OK to play on." It should commission a new comprehensive study that takes into account all current knowledge about the composition of all components of artificial turf and more accurately characterizes the real and potential risks from artificial turf.

We look forward to receiving your response within 60 days, as specified in the CPSC information quality guidelines.[73]

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[73] CONSUMER PRODUCT SAFETY COMMISSION, INFORMATION QUALITY GUIDELINES, *available at* http://www.cpsc.gov/en/Research--Statistics/Information-Quality-Guidelines/.

Sincerely,

Jeff Ruch
Executive Director