THE CIRCUIT COURT OF COOK COUNTY, ILLINOIS
COUNTY DEPARTMENT, CHANCERY DIVISION

PROTECT OUR PARKS, INC., an Illinois not-for-profit corporation, and EURYDICE CHRONES, Plaintiffs, vs. LATIN SCHOOL OF CHICAGO, a private educational institution, CHICAGO PARK DISTRICT, a municipal corporation, GERY J. CHICO, President, Board of Commissioners, ROBERT J. PICKENS, Vice-President, Board of Commissioners, DR. MARGARET T. BURROUGHS, Commissioner, M. LAIRD KOLDYKE, Commissioner, REVEREND DANIEL MATOS-REAL, Commissioner, ROUHY J. SHALABI, Commissioner, TIM MITCHELL, General Superintendent of Chicago Park District, CHICAGO PLAN COMMISSION, an agency of the City of Chicago, the CITY OF CHICAGO, a municipal corporation, SUZANNE MALEC-MCKENNA, Commissioner, Chicago Department of Environment, SADHU JOHNSTON, Commissioner for Environmental Issues, FIELDTURF USA, INC., a Florida corporation, Defendants.	)	Case No.

VERIFIED COMPLAINT FOR INJUNCTIVE AND OTHER RELIEF

NOW COME Plaintiffs PROTECT OUR PARKS, INC., ("POP") and EURYDICE CHRONES, and complaining of Defendants LATIN SCHOOL OF CHICAGO, CHICAGO PARK DISTRICT, GERY J. CHICO, ROBERT J. PICKENS, DR. MARGARET T. BURROUGHS, M. LAIRD KOLDYKE, REVEREND DANIEL MATOS-REAL, ROUHY J.

SHALABI, TIM MITCHELL, CHICAGO PLAN COMMISSION, CITY OF CHICAGO, SUZANNE MALEC-MCKENNA, SADHU JOHNSTON, and FIELDTURF USA, INC., state as follows:

Nature of the Case

1. Plaintiffs bring the instant lawsuit to preliminarily and permanently enjoin the installation of a hazardous artificial turf field at the location commonly known as North Meadow of South Field in Lincoln Park, Chicago, Illinois (hereinafter, "South Field"). South Field is a public park and subject to the Lakefront Protection Ordinance ("LPO"). Plaintiffs bring this suit both individually and in the public interest on behalf of the City of Chicago, a governmental entity which is failing to adequately protect the public health, safety, and welfare in connection with the subject matter of this Complaint. The Defendants actions in furtherance of installation of a hazardous artificial turf field at South Field violate Illinois law and the Chicago Municipal Ordinances and should be enjoined by this Court.

Parties

2. Plaintiff POP is a charitable and educational not-for-profit corporation, and a 501(c)(3) registered entity, dedicated to monitoring the actions of the Chicago Park District and taking action to preserve public park land and open space and to oppose privatization, destruction, and contamination of public park land. Many, if not all, of POP's officers and supporters are residents of Lincoln Park, reside near South Field, and enjoy open, clear, and free use of the park.

3. Plaintiff Eurydice Chrones is a citizen, resident and taxpayer in the City of Chicago who resides in close proximity to South Field. Ms. Chrones is the mother of two minor children who visit and participate in recreational activities in Lincoln Park. She is

typical and representative of the class of parents with minor children using Lincoln Park for recreational activities, a number too large for it to be practicable for all to be joined and participate in the litigation.

4. Defendant Latin School of Chicago ("Latin School") is a private educational institution, located at 59 W. North Blvd., Chicago, Illinois. Latin School, along with Defendant Chicago Park District ("CPD"), is the entity which designed, selected, ordered, and contracted for the artificial turf products to be installed, or currently being installed, at South Field (hereinafter, collectively, the "Turf"), which contracts the CPD has taken by assignment and for which it has assumed responsibility.

5. Defendant CPD is a municipal corporation and unit of local government of the State of Illinois, created pursuant to 70 ILCS 1505/0.01 *et seq.*

6. Gery J. Chico (President, Board of Commissioners), Robert J. Pickens (Vice President, Board of Commissioners), Dr. Margaret T. Burroughs (Commissioner), M. Laird Koldyke (Commissioner), Reverend Daniel Matos-Real (Commissioner), and Rouhy J. Shalabi (Commissioner) (collectively, the "Commissioners"), have been appointed by the Mayor of the City of Chicago and presently serve as Commissioners of the CPD, in which capacity they are charged with the responsibility of protecting, administering, and developing the park uses of public park lands located in the City of Chicago, with special fiduciary duties relating to dedicated public park lands that are held in public trust, such as Lincoln Park. These Defendants are sued in their official capacities.

7. Defendant Tim Mitchell is General Superintendent of the CPD.

8. Defendant Chicago Plan Commission (the "Plan Commission") is an agency of the City of Chicago, which, *inter alia*, is charged with those duties as set forth in Section 16-

4-100(a) - (e) of the Chicago Municipal Code, relating to notice of public hearing, holding a public hearing, and providing a recommendation relating to any improvement, construction, alterations, or building activity occurring on public property subject to the Lakefront Protection Ordinance.

9. Defendants Suzanne Malec- McKenna and Sadhu Johnston are Commissioners of the Chicago Department of Environment and are charged with enforcement of environmental ordinances and laws.

10. Fieldturf USA, Inc. ("Fieldturf") is a corporation organized and existing under the laws of the state of Florida and engaged in the manufacture, sale, transfer, and distribution and installation of hazardous substance-bearing artificial turf products in the State of Illinois, the County of Cook, and the city of Chicago. Fieldturf is the manufacturer, distributor, transferor, and seller of the Turf.

11. Plaintiffs bring this action both as taxpayers residing in the City of Chicago, regular visitors and public users of the parks, and on behalf of the City of Chicago.

Background to the Dispute

12. On or about December 1, 2006 Defendants CPD and Latin School entered into an agreement to design and construct an artificial turf soccer field in South Field Lincoln Park, 1840 N. Cannon Drive, Chicago, which is positioned immediately adjoining to the heavily traveled high speed lanes of traffic on North Lake Shore Drive and the local entry and exit lanes where it crosses the intersection with North LaSalle Drive. A copy of excerpts of the December 1, 2006 agreement relating to artificial turf are attached hereto as Exhibit A.

13. The Latin School/CPD artificial turf soccer field is designed to drain and discharge all runoff from the artificial turf field directly into nearby Lake Michigan without

treatment or waste processing. Pictures of the site of the soccer field under construction, showing its proximity to Lake Shore Drive, are attached hereto as Group Exhibit B.

14. The CPD and Latin School selected the Turf product to be installed in the proposed soccer field.

15. The CPD has admitted in response to Freedom of Information Act requests for production of records submitted in 2008 that it did not perform any independent tests to determine the safety of the site selected for the artificial turf soccer field or to determine the dangers to child health and safety due to contact with the known dangerous chemicals in artificial turf and recycled tire crumb rubber. A copy of the CPD's response to the FOIA request is attached hereto as Exhibit C.

Hazards Posed by the Turf

16. Lead and other toxic substances are constituent substances of the Turf product, as is, specifically, the integral recycled tire crumb rubber infill used as a cushioning layer in the Turf.

17. Lead is a toxic metal. When lead gets into the human body it acts as a toxin and a person so affected is described as being lead poisoned. Infants and children are particularly susceptible to lead's toxic effect. The American Academy of Pediatrics has reported that lead "is a serious threat to children's health" and that "there is no 'safe' level of lead exposure".

18. The Connecticut Agricultural Experiment Station independently has found the following dangerous chemicals in rubber tire "crumbs," such as those which form an integral part of the Turf:

- Benzothiazole, a substance which is known to cause skin and eye irritation and is harmful if swallowed.

- Butylated hydroxyanisole, a substance which is a recognized carcinogen, suspected endocrine toxicant, gastrointestinal toxicant, immunotoxicant (adverse effects on the immune system), neurotoxicant (adverse effects on the nervous system), skin and sense-organ toxicant.

- n-hexadecane, a substance which is known to be a severe irritant based on human and animal studies.

- 4-(t-octyl) phenol, a substance which is known to be corrosive and destructive to mucous membranes.

- Zinc.

19. Other chemicals often found in rubber tires, and, upon information and belief are found in the crumb rubber component of the Turf, include, *inter alia*:

- Benzene, a carcinogen, a developmental toxicant and reproductive toxicant;

- Phtalates, a suspected developmental toxicant, endocrine toxicant, and reproductive toxicant

- PAHs, suspected cardiovascular or blood toxicant, gastrointestinal or liver toxicant, reproductive toxicant, and respiratory toxicant;

- Maganese, a gastrointestinal or liver toxicant;

- Carbon black, a carcinogen; and

- Latex, a substance which causes allergic reactions in some people.

20. Rubber tire crumbs, as used in the Turf product, release chemical compounds into the air and ground water and constitute chemical exposure for humans and the environment. The rubber tire crumbs release airborne dust and chemicals, a release which will surely happen if and when the Turf is exposed in the ambient Chicago climate and conditions. (See David Brown, Sc.D., *Public Health Toxicologist, Exposures to Recycled Tire Rubber Crumbs Used on Synthetic Turf Fields, Playgrounds and as Gardening Mulch*, August 29, 2007, a copy of which is attached hereto as Exhibit D).

21. In Illinois, used rubber tires are considered a "Hazardous Waste," and a permit is required to safely dispose of rubber tires.

22. On June 18, 2008, the U.S. Centers for Disease Control issued a Health Advisory on exposure to existing artificial turf playing fields (Exhibit E hereto):

> General Recommendations on the Use of Fields with Artificial Turf:
>
> 1. After playing on the field, individuals are encouraged to perform aggressive hand and body washing for at least 20 seconds using soap and warm water;
>
> 2. Clothes worn on the field should be taken off and turned inside out as soon as possible after using the field to avoid tracking contaminated dust to other places. In vehicles, people can sit on a large towel or blanket if it not feasible to remove their clothes. These clothes, towels and blankets should be washed separately and shoes worn on the field should be kept outside of the home.
>
> 3. Eating while on the field or turf product is discouraged.
>
> 4. Avoid contaminating drinking containers with dust and fibers from the field. When not drinking, close them and keep them in a bag, cooler, or other covered container on the side of the field.

23. On or around February 28, 2008, Defendant Latin School was served with a lead warning letter regarding the Turf, and on July 21, 2008, Defendants CPD, Chico, and Mitchell received notice of the CDC's June 18, 2008 Advisory and a copy thereof from a concerned citizen. Copies of these letters are attached hereto as Group Exhibit F. Upon information and belief, none of these four Defendants, nor any other, has given any public warning or taken any action in response to the CDC Advisory in protection of child health and safety.

24. On October 10, 2008, Daniel Hryhorczuk, MD, MPH, Professor and Director of the Great Lakes Center for Occupational and Environmental Safety and Health of the University of Illinois at Chicago School of Public Health, and Susan Buchanan, MD, MPH,

the Assistant Director of the Pediatric Environmental Health Specialty Unit of the University of Illinois at Chicago School of Public Health, issued a letter expressing their concerns regarding the potential risk to children's health caused by the construction of the artificial turf field at South Field. In their letter, Drs. Hryhorczuk and Buchanan note as follows:

- The artificial turf field poses a potential lead hazard to children;
- The artificial turf field could pose a heat risk to children; and
- The artificial turf field poses a bacteria exposure risk and infection risk to all humans who come into contact with the field.

Drs. Hryhorczuk and Buchanan further state,

> We advise that the City of Chicago should conduct an assessment of the environmental health risks of the artificial turf field in Lincoln Park before continuing with its installation. We believe that the data collected by multiple researchers and the U.S. Centers for Disease Control and Prevention demonstrate the need to conduct such a risk assessment. Until a risk assessment is conducted, we strongly urge park planners to stick with regular grass fields instead of installing a product that may harbor bacteria, function as a heat sink, and may contain chemicals which are hazardous to children.

A copy of the October 10, 2008 letter is attached hereto as Exhibit G.

25. Upon information and belief, neither the CPD nor the City, nor any other Defendant, has conducted the risk assessment advised by Drs. Hryhorczuk and Buchanan in their October 10, 2008 letter, yet, at the time of filing this Complaint, installation of the Turf products continues at South Field.

Applicable Provisions of the Illinois Constitution

26. The Illinois Constitution, Article XI, §2 provides as follows:

> Each person has the right to a healthful environment. Each person may enforce this right against any party, governmental or private, through

appropriate legal proceedings subject to reasonable limitation and regulation as the General Assembly may provide by law.

27. The Illinois Constitution, Article XI, § 12 provides as follows:

> Every person shall find a certain remedy in the laws for all injuries and wrongs which he receives to his person, privacy, property or reputation. He shall find justice by law freely, completely, and promptly.

Illinois' Lead Poisoning Prevention Act

28. The State of Illinois has enacted the Lead Poisoning Prevention Act, 410 ILCS 45/1 *et seq.* (the "LPPA").

29. Section 2 of the LPPA identifies as a "High Risk Lead Exposure Area," "proximity to highway traffic or heavy local traffic," and "Lead Hazard" as a "lead bearing substance that poses an immediate health hazard to humans."

30. Section 15 of the LPPA further provides as follows:

> Nothing in this Act shall be interpreted or applied in any manner to defeat or impair the right of any person, entity, municipality or other political subdivision to maintain an action or suit for damages sustained or for equitable relief, or for the violation of an ordinance by reason of or in connection with any violation of this Act. The failure to remove lead based substances within the time prescribed by this Act shall be prima facie evidence of negligence in any action brought to recover damages for injuries incurred after the expiration of that period. This Act shall not prohibit any city, village, incorporated township or other political subdivision from enacting and enforcing ordinances establishing a system of lead poisoning control which shall provide the same or higher standards than set forth in this Act.

The City's Lead Bearing Substances Ordinance

31. The City of Chicago has enacted a Lead Bearing Substances Ordinance, Chapter 7-4-010 *et seq.* (the "LBSO"). Section 40 of the LBSO provides as follows:

> No person shall have, offer for sale, transfer, distribute to the public, place in the stream of commerce, or manufacture any item that contains a lead bearing substance.

32. Section 30 of the LBSO further provides:

> It is the duty of every owner of a school to maintain the school....in such a manner as to prevent the existence of a lead hazard" which includes [7-4-010 (7)] "exterior surfaces in a school exposed to lead bearing substances.

33. Defendant Latin School, which includes kindergarten, elementary and high school classes, describes the adjacent Lincoln Park as its "Athletic Resource" and commandeers the public park for 23 outdoor activities including field hockey, baseball, softball, boys and girls soccer, track & field, and golf instruction, and uses Lincoln Park to conduct outdoor practices and home game contests. True and accurate copies of Defendant Latin School's website pages are attached hereto as Exhibit H.

34. Sections 150(a) and 160 of the LBSO provide that, "[a]ny department of the City of Chicago may take appropriate action to enforce any of the provisions of this chapter when a violation of any of the provisions comes to its attention," and "[t]he corporation counsel may seek relief with respect to any violation of this chapter by filing an appropriate action in a court of competent jurisdiction..."

The City's Failure to Study the Health Hazards Posed by the Turf

35. Pursuant to the Lakefront Protection Ordinance ("LPO"), Chapter 16-4-110, Defendant CPD was required to make application before the Chicago Plan Commission pertaining to the construction of the artificial turf field at South Field. The LPO further requires that the Application be submitted to the City Department of Environmental Control which is required "to prepare and submit to the Chicago Plan Commission a written report which shall include his findings and recommendation on each application or proposal."

36. Despite this requirement, upon information and belief, the Department of Environment did not conduct an actual or genuine independent investigation or study of the health hazards related to the Turf. The sole submission from the department was a short three paragraph letter which merely concluded that a local, state and federal database search found "No environmental records that could potentially cause a negative impact". (Exhibit I)

37. A cursory search of Internet databases would have disclosed voluminous records evidencing the dangers of artificial turf to child health and safety.

38. At the time of filing this Complaint, construction of the Turf field is rapidly progressing, although the actual Turf has yet to be installed.

39. Upon information and belief, construction of the Turf field is occurring under the direction and supervision of Defendants CPD and Latin School.

40. The Public Health Ordinance of the City of Chicago, Chapter 7-28-030, provides as follows:

> **Common law and statutory nuisances.** In all cases where no provision is herein made defining what are nuisances and how the same may be removed, abated, or prevented, in addition to what may be declared such herein, those offenses which are known to the common law of the land and the statutes of Illinois as nuisances may, in case the same exist within the city limits or within one mile thereof, be treated as such, and proceeded against as is provided in this Code, or in accordance with any other provision of law.

41. Violations of the Lead-Bearing Substances Ordinance and the harmful effects of the Turf to the public health, safety, and welfare were and are known to the CPD, the City, the Department of Environment, the Plan Commission, as well as Latin School and all other Defendants. However, all these Defendants have been complicit in advancing and

perpetuating those violations rather than initiate precautionary, protective, and enforcement action against the offending Latin School, the CPD, or Fieldturf USA.

42. Plaintiffs, as taxpayers in the City of Chicago and regular users of the park, bring this action both as specially injured individuals and on behalf of the City of Chicago itself, because the public's right to be free of the hazards and injuries to the public health posed by the Turf - a right belonging to the taxpayers - is being squandered, surrendered, violated, and denied by the public officers charged with protecting such rights.

43. The City of Chicago and its various officers have an affirmative duty to protect the public health, safety, and welfare, but have chosen to breach such duty by allowing, and indeed promoting, the installation of the Turf at South Field, as described above.

44. The City of Chicago and its various officers have no discretion *not to* protect the public health, safety, and welfare from the harms resulting from installation of the Turf at South Field.

45. It would be futile and unavailing to make further demand upon the public officers charged with protecting the public from the dangers of the Turf, to bring suit in this matter. Such officers themselves, as described above, have been and are complicit in advancing and effectuating the plan to install the Turf.

46. Unless an injunction is entered, the Defendants will install, or continue to install, the hazardous substance-bearing Turf in Lincoln Park, in violation of law, and endanger the health, safety, and welfare of Plaintiffs, other nearby residents, regular users of the park, the minor children attending the Latin School, as well as the general public who visit the public field for a variety of recreational activities and will be exposed to the dangers of lead poisoning and other hazardous substances.

47. There exists a dangerous probability that such endangerment will occur, unless installation of the Turf is preliminarily and permanently halted by the Court.

COUNT I
(Public Nuisance)

1-47. Plaintiffs hereby repeat and reallege the allegations contained in ¶¶1-47 as ¶¶1-47 of this Count I.

48. The public has a right to be free of the hazards and dangers posed by the Turf, described above, which will adversely affect the environment shared by all members of the public.

49. The Defendants, through their concerted actions described above, are substantially and unreasonably interfering with the rights of the public to be free of the hazards and dangers posed by the Turf.

50. If allowed to continue, upon information and belief, installation and placement of the Turf in South Field will cause substantial and serious injury to the public, especially the many minor children who will use the field for athletic and other activities.

51. The various acts of the Defendants alleged herein have culminated in the creation of a public nuisance which is injurious to the public health, safety, and welfare. Such injuries are visited especially upon all the children who will frequent South Field in the future and Plaintiffs and others situated in close proximity to the Turf and the hazards which emanate therefrom.

WHEREFORE, Plaintiffs pray for judgment in their favor and against the Defendants and for the following relief:

a. A temporary restraining order and preliminary and permanent injunction, against all Defendants involved in the construction of the Turf field at South

Field, ordering removal of all Turf, or any part thereof existing at the time any TRO or injunction is entered, and other hazardous materials from South Field enjoining all further use of the Turf and any other artificial turf materials and other hazardous substances on South Field;

b. An award of Plaintiffs' damages, costs, and attorneys' fees incurred as a result of the Defendants' wrongful activities as alleged herein; and

c. Such other and further relief as the Court deems appropriate and just.

COUNT II
(Violation of Illinois Constitution - Article XI, § 2)

1-51. Plaintiffs hereby repeat and reallege the allegations contained in ¶¶1-51 of Count I as ¶¶1-51 of this Count II.

52. Article XI, § 2 of the Illinois Constitution provides as follows:

> RIGHTS OF INDIVIDUALS. Each person has the right to a healthful environment. Each person may enforce this right against any party, governmental or private, through appropriate legal proceedings subject to reasonable limitation and regulation as the General Assembly may provide by law.

53. The Plaintiffs and the public in general have a right a healthful environment to be free of the hazards and dangers posed by the Turf, described above.

54. Defendants have violated this right by their concerted actions in furtherance of a plan to install the Turf at South Field and thereby introducing hazardous substances into the environment of the City of Chicago, and, more specifically, threatening the health, safety, and welfare of all children and others who frequent Lincoln Park.

WHEREFORE, Plaintiffs pray for judgment in their favor and against the Defendants and for the following relief:

a. A temporary restraining order and preliminary and permanent injunction, against all Defendants involved in the construction of the Turf field at South Field, ordering removal of all Turf, or any part thereof existing at the time any TRO or injunction is entered, and other hazardous materials from South

Field enjoining all further use of the Turf and any other artificial turf materials and other hazardous substances on South Field;

b. An award of Plaintiffs' damages, costs, and attorneys' fees incurred as a result of the Defendants' wrongful activities as alleged herein; and

c. Such other and further relief as the Court deems appropriate and just.

COUNT III
(Violation of Lead Bearing Substances Ordinance)

1-54. Plaintiffs hereby repeat and reallege the allegations contained in ¶¶1-54 of Count II as ¶¶1-54 of this Count III.

55. Sections 150(a) and 160 of the LBSO provide that, "[a]ny department of the City of Chicago may take appropriate action to enforce any of the provisions of this chapter when a violation of any of the provisions comes to its attention," and "[t]he corporation counsel may seek relief with respect to any violation of this chapter by filing an appropriate action in a court of competent jurisdiction..."

56. As noted above, the City of Chicago, its departments, its agencies, and its officers have surrendered, squandered, violated, and denied the right of the citizens of Chicago to be free of the lead-based hazards posed by the Turf. The City and the other Defendants have failed to take any action regarding the lead-bearing Turf, and, instead, have been complicit in advancing the plan for installing the Turf at South Field.

57. Defendant Field Turf has violated the LBSO by having, offering for sale, transferring, distributing to the public, placing in the stream of commerce, and manufacturing any item that contains a lead bearing substance.

58. Defendant Latin School has violated the LBSO by not maintaining its "athletic facility" (i.e. South Field) "in such a manner as to prevent the existence of a lead hazard," which includes "exterior surfaces in a school exposed to lead bearing substances."

WHEREFORE, Plaintiffs pray for judgment in their favor and against the Defendants and for the following relief:

a. A temporary restraining order and preliminary and permanent injunction, against all Defendants involved in the construction of the Turf field at South Field, ordering removal of all Turf, or any part thereof existing at the time any TRO or injunction is entered, and other hazardous materials from South Field enjoining all further use of the Turf and any other artificial turf materials and other hazardous substances on South Field;

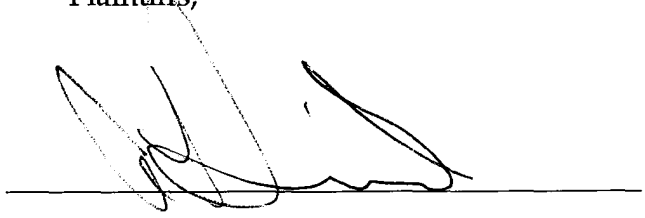
b. An award of Plaintiffs' damages, costs, and attorneys' fees incurred as a result of the Defendants' wrongful activities as alleged herein; and

c. Such other and further relief as the Court deems appropriate and just.

Dated: October 13, 2008

PROTECT OUR PARKS, INC. and
EURYDICE CHRONES,

Plaintiffs,



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VERIFICATION

I, Herbert Caplan, Board Member of Plaintiff Protect Our Parks, Inc., under penalties provided by law pursuant to §1-109 of the Illinois Code of Civil Procedure, certify that the statements set forth in the foregoing Verified Complaint for Injunctive and Other Relief are true and correct, except as to matter stated therein to be on information and belief, and as to such matters certify as aforesaid that I verily believe the same to be true.

Dated: 10/13/08

Herbert L. Caplan

A

LINCOLN PARK SOUTH FIELD AGREEMENT

This Lincoln Park South Field Agreement (the "**Agreement**") is entered into as of December 1, 2006 by and between the Chicago Park District, an Illinois unit of local government (the "**Park District**") and The Latin School of Chicago, an Illinois not for profit corporation ("**Latin**"). The Park District and Latin are sometimes referred to herein individually as a "**Party**" and collectively as the "**Parties.**"

RECITALS

WHEREAS, the Park District owns and operates a parcel of land located at the southern end of Lincoln Park, north of North Avenue, west of Lake Shore Drive and east of Dearborn Street (the "**Site**");

WHEREAS, the Parties have determined that they can advance the interests, opportunities, fitness and wellbeing of the general public, including the Latin community, through the construction, operation, maintenance and repair of a regulation sized artificial surface playing field and related amenities to be located at the Site as generally shown on **Exhibit A** attached hereto and incorporated herein (the "**Project**");

WHEREAS, Latin has agreed to pay for and undertake the work with respect to the design and development of the Project, subject to the approval of the Park District and in accordance with the terms of this Agreement;

WHEREAS, in consideration thereof, the Park District will grant Latin, its employees, volunteers, students and guests a non-exclusive license to use the Site and the Project in accordance with the terms hereof and the Park District and the general public shall have the right to use the Site and Project at all other times;

WHEREAS, the Parties agree to mutually cooperate in the design, construction, development, operation, maintenance and use and enjoyment of the Project in accordance with the terms hereof.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

TERMS AND CONDITIONS

1. Description of the Project. The Project includes without limitation the design and development of a new playing field with an artificial turf surface, lined, as applicable, for regulation soccer and field hockey play, lighting for nighttime use, seasonal goal posts and netting, two (2) benches for participants and one (1) bleacher area with seating, a scoreboard, landscaping, drainage, pathways, unlocked fencing, drinking fountains, an electric junction box and trash receptacles. The field shall be sized to meet IHSA requirements and thus at a minimum be 195 by 330 feet plus reasonable recommended buffers.

2. Term. The initial term of this Agreement begins on the date this Agreement is executed by both Parties and will remain in effect for a period of ten (10) years from the completion of the construction of the Project. At the request of either Party, the Parties shall execute a commencement letter certifying the completion of the construction of the Project and thus the commencement of the ten (10) year period. In addition, Latin has the

right and option to extend the initial term hereof for one (1) additional term of ten (10) years, provided (i) it shall give the Park District written notice of its intention to so extend, (ii) there are no existing material events of default by Latin under this Agreement, (iii) within either twelve (12) months prior to the giving of such notice or twelve (12) months after the expiration of the initial term, Latin shall have caused the surface of the field area to be upgraded or replaced and shall have contributed two-thirds (2/3) of the cost of such upgrade or replacement with the other one-third (1/3) of such cost to be paid by the Park District, and (iv) the Park District shall have consented to such option as evidenced by its election not to exercise the termination right contained in **Section 15** hereof. Notwithstanding the provisions of the immediately preceding clause (iii), if (a) in the reasonable judgment of the Park District and Latin, the surface of the field is in sound condition, the parties can elect by mutual agreement to defer such upgrading or replacement until a later date so as to maximize the overall useful life of the field for the benefit of all users, or (b) the Park District is unwilling or unable to timely fund its one-third (1/3) of such cost, then, at Latin's option, (x) the obligation to upgrade or replace the field surface shall be waived or (y) Latin can elect to upgrade or replace the field surface at its sole cost provided that any use fees subsequently charged by the Park District shall be remitted to Latin until such time that the sum of such fees equals one-third (1/3) of the cost of the upgrading or replacement. Further notwithstanding, in the event that the resurfacing of the field as contemplated hereby, extends the useful life of the playing field (based on reasonable experience and the field manufacturer's useful life projections) beyond the end of the extended term, then such extended term shall automatically be extended to coincide with such extended useful life and at the request of either Party, the parties shall execute a letter certifying such extended termination date.

3. Park District Approval. The Parties acknowledge and agree that the Project is subject to the approval of the Park District Board (**"Board Approval"**) and that no physical construction of the Project shall commence prior to the receipt of such approval and the corresponding issuance of a permit (the **"Permit"**) for the Project from the General Superintendent of the Park District (the **"General Superintendent"**). If this Agreement is executed prior to receipt of Board Approval and Board Approval is not received, then this Agreement shall terminate. The Park District represents and warrants that (a) upon the execution of this Agreement, it has the power and authority to enter into and perform its obligations hereunder and (b) to the best of the Park District's knowledge, the use of the Site for the Project is permitted under applicable law. The Permit shall be substantially in the form attached hereto as **Exhibit E.**

4. Latin Approval. Latin represents and warrants that it has the power and authority to enter into and perform its obligations hereunder.

5. Obligations, Duties and Rights of Latin.

a. Design. Latin shall be responsible for the cost and work relating to the design of the Project. Latin shall submit to the Park District a schematic design plan for the Project for the General Superintendent's reasonable review and written approval. Once the schematic design plan is agreed to, Latin shall cause such design plans to be conformed to commercially reasonable design and construction requirements. The Parties acknowledge that the schematic design plan for the Project may be required for submission for Board Approval.

b. Construction of Field. Latin, at its expense and subject to the terms of this Agreement, shall cause the construction of the Project by a third party substantially in accordance with the plans submitted and approved pursuant to **Section 5(a)** and **Section 6(b)** hereof. Any material alterations, changes, deviations, or amendments to the final design plans will require written authorization from the

IN WITNESS WHEREOF, the Chicago Park District and The Latin School of Chicago have caused this Agreement to be executed as of the date first above written.

CHICAGO PARK DISTRICT

By: _____
Timothy J. Mitchell
General Superintendent & CEO

By: _____
Darlene Lesniak
Secretary

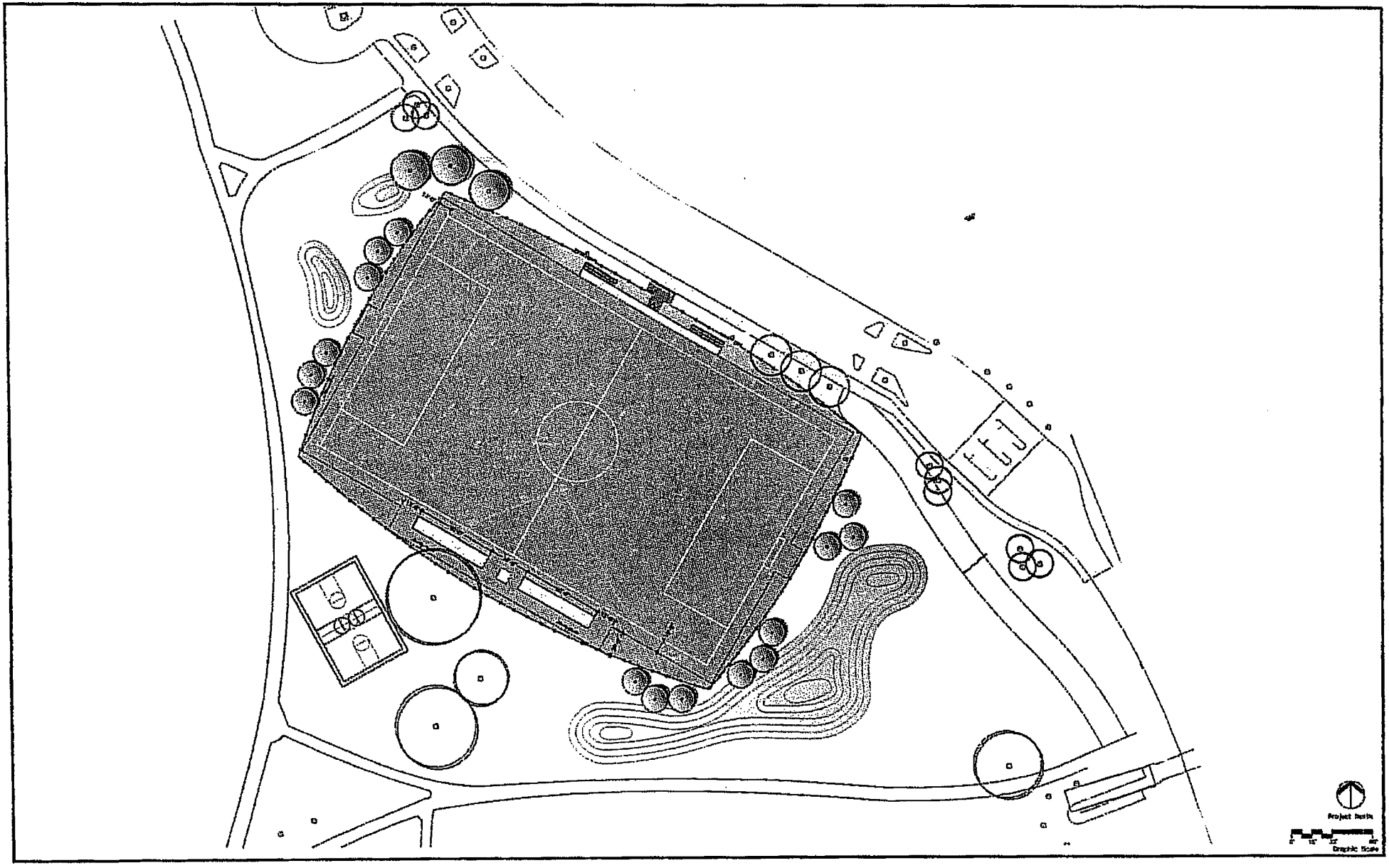
THE LATIN SCHOOL OF CHICAGO

By: _____
Donald W. Firke
Head of School

EXHIBIT A

Site and Project Location

See Attached Aerial Photograph



LINCOLN PARK SOUTH – SOCCER FIELD

CHICAGO, ILLINOIS

PRELIMINARY SITE PLAN

JJR

NOVEMBER 10, 2006

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10.06 08:40


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C

chicago park district

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August 11, 2008

Coleen Blake
29 West Chestnut
Chicago, IL 60610

Via U.S. Postal
Dear Ms. Blake:

The Chicago Park District is in receipt of your Freedom of Information Act (FOIA) request for the following document(s):

a. Copies of the contracts with Pan–Oceanic Engineering Co. and All-Bry Construction Company for artificial turf fields at Calumet, McKinley, and Riis Parks.

RESPONSE: The Chicago Park District provides you the opportunity to inspect the documents or pay for copies.

b. The verbatim transcript and minutes for the July 9, 2008 meeting of the Committee on Capital construction.

RESPONSE: The Chicago Park District provides you the opportunity to inspect the documents or pay for copies.

c. The verbatim transcript and minutes for the July 9, 2008 meeting of the Committee of the Whole (Board Meeting)

RESPONSE: The Chicago Park District provides you the opportunity to inspect the documents or pay for copies.

d. Copies of all Chicago Park District and City of Chicago rules and regulations for site selection of park facilities and athletic fields.

RESPONSE: None, other than the Chicago Park District code and Chicago Park District Act, 70 ILCS 1505, both available on-line.

e. Copies of all Chicago Park District and City of Chicago rules for public/private partnership.

RESPONSE: The Chicago Park District responds that we have no documents responsive to your request.

f. Copies of all public/private partnership agreements the Chicago Park District has entered into.

RESPONSE: Due to the broad nature of the request the Chicago Park District is unable provide responsive documents. The District does not categorize agreements based upon public/private partnerships. You may renew your request by providing specific information including sufficient detail to enable us to locate the responsive records with a reasonable amount of effort.

g. Copies of all traffic studies commissioned by the Chicago Park District for South Lincoln Park.

RESPONSE: The Chicago Park District responds that we have no documents responsive to your request.

h. Copies of all environmental studies commissioned by the Chicago Park District for the South Lincoln Park Area and the 1840 North Cannon Drive site.

RESPONSE: The Chicago Park District responds that we have no documents responsive to your request.

i. All documents describing the nature and character of the artificial turf to be used in the athletic fields at Calumet, McKinley, Riis and South Lincoln Park and the manufacturers and vendors of the artificial turf to be used in these parks.

RESPONSE: Please see response to (a) above.

The Chicago Park District can provide you a copy of the available documents. Please note that the Chicago Park District provides the first twenty (20) pages free of charge; each additional page is copied at fifteen (.15) cents per page. The documents you have requested consist of a total of 427 pages. The current page total for excess copies is 407 pages; therefore the total excess copying cost is $61.05. You may take possession of the copies by submitting a check or cash for this amount.

If you have any questions or concerns feel free to contact me.

Sincerely,

Erik A. Varela
Senior Counsel
Chicago Park District

D

Exposures to Recycled Tire Rubber Crumbs Used on Synthetic Turf Fields, Playgrounds and as Gardening Mulch

A report prepared by Environment and Human Health, Inc.

David Brown, Sc.D., Public Health Toxicologist

August 29, 2007

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Introduction

This report is designed to place the health and environmental exposures of recycled tire crumbs and mulch in a scientifically based qualitative and quantitative context. In the spring of 2007 Environment and Human Health Inc., received numerous inquiries about health concerns with respect to children's exposures to ground-up rubber tire "crumbs" that are the in-fill material in the new synthetic turf fields. Such fields have been installed, or are being proposed, in towns all over Connecticut and many other states.

The safety information about the new synthetic fields has mainly focused on the health benefits from the reduction of joint injuries due to the use of the rubber tire crumbs in the new fields. Public health analysis of the health risks from human exposures from the rubber crumbs has not been adequately addressed up to this point.

Research finds that the new synthetic fields are surfaced with a product called "in-fill" that is made from recycled tires. This material is referred to as "tire crumbs" and constitutes the primary playing surface. We estimate these crumbs to be as much as 90% by weight of the fields. The tire crumbs are roughly the size of grains of course sand. They are made by shredding and grinding used tires. Tire crumb materials are spread two to three inches thick over the field surface and packed between ribbons of green plastic used to simulate green grass.

Review of the immediately available literature about these new fields found that similar health concerns had been raised in other states as well as in other countries. In addition to athletic fields, shredded tires are being used on playgrounds and as gardening mulch.

There have been some studies done on the health effects from exposures to the rubber crumb material, but many of these studies present only partial assessments of the human health risk potential. As well, many studies have major data gaps with respect to the chemicals released, as well as the actual levels of exposures to humans and the environment.

From the information that is available, it was found that tire crumbs contained volatile organic hydrocarbons (VOCs) with carcinogenic potential, which could be extracted from the crumbs in the laboratory. Health reports from workers in the rubber fabrication industry and in the rubber reclamation industry describe the presence of multiple volatile organic hydrocarbons, semi-volatile hydrocarbons and other toxic elements in the air. Studies at tire reclamation sites report the leaching of similar sets of chemicals into the ground water. Occupational studies document a spectrum of health effects ranging from severe skin and eye irritation and respiratory irritation to three forms of cancer.

The relationship between exposures to the rubber workers and those experienced by people using athletic fields or children in playgrounds covered with ground-up rubber tire material is not known, but we do know that many of the same chemicals that rubber workers are exposed to are being released from the ground-up rubber tire crumbs.

Based on uncertainty with respect to what these exposures mean for children's health, as well as the environmental leaching of the materials into the ground water, EHHI decided to initiate an exploratory study with the Connecticut Agricultural Experiment Station to determine the chemicals released into the air and water under ambient conditions.

Findings

Samples of ground-up rubber tire gardening mulch and tire crumbs used in the new synthetic fields were obtained for laboratory evaluation at the Connecticut Agricultural Experiment Station. One set of experiments tested the **leaching potential** of the metals from samples of tire crumbs and one sample from commercial rubber mulch.

The second set of experiments tested the **chemicals released** from the tire crumbs used for "in-fill" and commercial rubber mulch. Ten metals were leached from the

samples of tire crumbs and the tire mulch in the first experiment. Twenty-five chemical species were identified with 72% to 99% certainty in the mass spectrometry and gas chromatography analysis in the second experiment. Nineteen were identified with over 90% certainty and five with over 98% certainty. Confirmatory studies provided a definitive identification of four of the major chemicals released.

Potential health and environmental risks

In this report, Environment and Human Health, Inc. evaluates the information known about the potential health and environmental risks from exposure to crumb rubber made from recycled tires.

Health concerns are documented in workers in rubber tire fabrication that are attributed to exposure to chemicals and dusts. Use of recycled tire shreds or crumbs in athletic fields, gardening and playgrounds involve repeated and direct exposures to children and adults to tire dust and some chemicals similar to those in tire plants. A comprehensive assessment of the information known about the health risks to the public is necessary to assess safety.

Determination of risks and safety from direct human exposures to mixtures of chemicals and dusts requires a systematic analysis of all data to assure a comprehensive evaluation of the hazard. The Agency for Toxic Substances and Disease Registry at the Centers for Disease Control and Prevention (ATSDR/CDC) Public Health Assessment model is the accepted approach to the identification and assessment of human health risks from environmental exposures. A public health assessment has three parts: (1) identification of pathways of exposures; (2) determination of contaminants of concern; and (3) assessment of the known and potential health risks from the exposures. The assessment uses this analysis to address community health concerns and recommend public health actions.

Laboratory identification of compounds released from tire crumbs and rubber mulch

The Connecticut Agricultural Experiment Station report, which is included in the appendix, found out-gassing and leaching from synthetic turf rubber crumbs under

aqueous ambient temperatures. Several compounds were present, but four compounds gave the highest responses on GC/Mass spectrographic analysis. The four compounds conclusively identified with confirmatory tests were: benzothiazole; butylated hydroxyanisole; n-hexadecane; and 4-(t-octyl) phenol. Approximately two dozen other chemicals were indicated at lower levels. These chemicals were released in laboratory conditions that closely approximate ambient conditions.

Those chemicals identified with confirmatory analytical studies at the Connecticut Agricultural Experiment Station study have the following reported actions:

- **Benzothiazole:** Skin and eye irritation, harmful if swallowed. There is no available data on cancer, mutagenic toxicity, teratogenic toxicity, or developmental toxicity.
- **Butylated hydroxyanisole:** Recognized carcinogen, suspected endocrine toxicant toxicant, gastrointestinal toxicant, immunotoxicant, neurotoxicant, skin and sense-organ toxicant. There is no available data on cancer, mutagenic toxicity, teratogenic toxicity, or developmental toxicity.
- **n-hexadecane:** severe irritant based on human and animal studies. There is no available data on cancer, mutagenic toxicity, teratogenic toxicity, or developmental toxicity.
- **4-(t-octyl) phenol:** corrosive and destructive to mucous membranes. There is no available data on cancer, mutagenic toxicity, teratogenic toxicity, or developmental toxicity.

The study also detected metals that were leached from the tire crumbs. Zinc was the predominant metal, but selenium, lead and cadmium were also identified.

Toxicology and health effects

The purpose of this step is to compile the known information about the biologic and toxicologic actions of the compounds identified above. The identification of toxic actions is based on research reported in the peer-reviewed literature and official listings such as the Integrated Risk Information System (IRIS) and Toxic Substance Control Act (TOSCA). Many, if not most, of the compounds present in tire crumbs and shreds have

incomplete testing for human health effects. In some cases a partial assessment can be based on the estimated actions of chemical class or on structural activity characteristics.

Ascertaining the toxic actions of the chemicals identified in the analytical test is dependent on the levels of research that have been performed and reported in the appropriate literature. A qualitative analysis usually precedes the quantitative analysis to determine potency.

Cancer

Some of the compounds are identified as known or suspected carcinogens. The following is a discussion of the toxicity and health effects of the agents that have been released from tire crumbs under different conditions. The strongest data available with respect to cancer is from the International Agency for Research on Cancer's study of the rubber industry. Strong and sufficient evidence for cancer in humans was demonstrated in a series of epidemiology studies of rubber fabrication facilities throughout the world. Cancer was also found in some other locations, but the data on exposures were insufficient to attribute a specific work task or exposure to the cancer.

One especially relevant report addressed exposures in a factory in Taiwan that made tire crumbs. In that study, mutagenic actions that were four to five times higher than in controls were shown in extracts of particulate matter collected in the air. These results indicate that the organic-dissolved portion of rubber particles contains various nitre-containing vulcanization stabilizers and accelerators, as well as process degradation products. Benzothiazole and 9-octadecenamide were identified as structures that would be converted to the N-nitrosamines under certain conditions. (*Chien et al., 2003.* "Assessment of Occupational Health Hazards in Scrap-Tire Shredding Facilities." *The Science of the Total Environment, 309 pages, 35-46).*

A 2006 Rutgers University study of tire crumbs taken from synthetic turf fields in New York City identified six polycyclic aromatic hydrocarbons (PAHs) at levels that reportedly exceeded the regulatory levels in New York State. These six compounds are highly likely to be carcinogenic to humans. The researchers caution that the availability of the carcinogens in the rubber is not established because solvent extraction was used to release the chemicals from the tire crumbs.

The Office of Environmental Health Hazard Assessment (OEHHA) of the California Department of Health prepared a report on potential risks, including carcinogenesis, from the use of recycled tire materials on playgrounds.

A literature review of studies of the release of chemicals from recycled tires in laboratory settings and field studies found 49 chemicals, seven of which were carcinogens.

In a study that modeled gastric digestion 22 chemicals were identified. In a study of hand-to-mouth activity using wipe samples, researchers found four polycyclic aromatic hydrocarbons (PAHs) and one metal, zinc. There also were 46 separate laboratory or field studies that reported either volatile organic compounds (20 studies), semi-volatiles (20 studies) or metals (29 studies). Some mentioned particulate collection.

Allergic Responses

Allergies are addressed in studies from both California and Norway, indicating a moderate level of health concern. Inadequate data is available to address the concerns about allergic reactions, but it is possible that sensitized individuals will respond to the exposures. With so many children having asthma today, this is a real concern.

Skin, eye and respiratory irritation

Skin, eye and respiratory irritation is the most common action identified in the literature for these chemicals. That probably reflects the regulatory requirement for such testing before the chemical can be shipped in commerce. These studies are the most basic of the toxicology testing schemes expected for materials with continuous human exposures. Based on the chemical structures of the aliphatic chemicals present, it is not surprising that they are listed as severe irritants. The irritation potential of aliphatic compounds increases with chain length up to 10 carbons and with increased branching of the molecules.

Thyroid effects, neurological effects

Other actions reported are thyroid effects, neurological effects and systemic toxicity related to the liver and the kidneys. There is insufficient exposure information to assess whether these effects would be seen with the releases from recycled tires used on synthetic turf field or in gardening mulch.

Release of metals to environmental media

The metals zinc, cadmium and lead were also identified as contaminants from tire rubber released into ground water. With the exception of zinc, there is insufficient data to assess the health or environmental risks of any of these metals. It appears clear that the zinc levels are high enough to be phytotoxic if they enter the ground water or soil. It is doubtful that there is any human toxicity from zinc at the levels reported, but such a conclusion would have to be tested by more careful study.

Particulates released to the air

Finally, the particulate exposures due to tire dust and chemicals contained in the dust that can be released in the lungs are especially troublesome. Nearly every test adequate to assess the risk that was reported found one or two dozen compounds released from particulates. There are processes in the body that can release the chemicals contained in the rubber particles. Moreover, potent carcinogens are found in the tire dust. Only the assumption of limited exposure could support the conclusions of low cancer risk.

Summary of toxic actions

In summary, the toxic actions of concern from the materials that were released from recycled crumb rubber include:

- Severe irritation of the respiratory system
- Severe irritation of the eyes, skin and mucous membranes
- Systemic effects on the liver and kidneys
- Neurotoxic responses
- Allergic reactions

- Cancers
- Developmental effects

Other reports on rubber tire crumbs with analytical data

A report from the Swedish Chemical Industry lists the materials in tires. Tires contain over 60 different substances—40% is rubber; the rest is carbon black, high aromatic oils, sulfur and various metals. Rubber is elastic polymers. The most common types of synthetic rubber are styrene-butadiene rubber and ethylene propylene rubber. Vulcanizing agents are used in manufacture and fillers and antioxidants and plasticizers are added for technical properties. A large number of high aromatic oils are added, including polyaromatic hydrocarbons, phthalates that can leach into water, phenols, metals including zinc, and low concentrations of lead. The materials in tire crumbs are derived from the manufacture of tires.

Other reported findings from environmental or laboratory testing, including direct analytical analysis of tire crumbs, are summarized in the California Office of Environmental Health Hazard Assessment (OEHHA) Report, *Evaluation of Health Effects of Recycled Waste Tires in Playground and Track Products, January 2007.* (http://www.ciwmb.ca.gov/Publications/Tires/62206013.pdf) and the Norwegian Public Health Report, *Artificial Turf Pitches – An Assessment of the Health Risks for Football Players, Prepared by Norwegian Institute of Public Health and the Radium Hospital, Oslo, January 2006.* (http://www.isss.de/conferences/Dresden%202006/Technical/FHI%20Engelsk.pdf)

These reports document the findings of volatile organic compounds, semi-volatile compounds, PAHs and metals. These findings are listed in the tables of these reports (see appendix).

Both the OEHHA report and the Norwegian study summarized the known non-cancer actions of the volatile, semi-volatile and metal compounds released into the environment by recycled tire crumb rubber and mulch. The information listed included primarily classifications of acute toxicity and irritation. Few of the chemicals have been classified for possible long-term effects and allergies. Although both studies attempted to determine the possible health risks from projected exposures, their evaluations are

restricted by an assumption of a single life-time exposure to 10 grams of tire crumbs or less (OEHHA) or estimated daily average exposures from periodic exposures of three to five weekly uses of synthetic turf fields.

EHHI cautions that both of these exposure assumption approaches could underestimate the actual exposures that would occur by orders of magnitude. Even using these assumptions, human health effects were projected for acute and cancer effects of certain of the identified compounds.

The most striking limitation of both the Norwegian and OEHHA studies is the lack of needed data on the actions of some of the more prevalent semi-volatile compounds such as benzothiazole. In fact, these chemicals are not included in the health analysis in either health assessment. That is a serious limitation because the compounds are important components of the chemicals that are released.

DISCUSSIONS OF RISK ASSESSMENTS

Assessment of risk

The final step in the assessment of "contaminants of concern" is the identification of acceptable minimal exposure levels that are below levels of health concern. Given the complexity of the exposures, the limited research information on the actual toxic actions of these chemicals and the limited experience with human exposures at sites other than tire fabrication facilities, identification of maximal safe exposure levels is not scientifically possible. Some researchers have compared projected exposures to background exposures in ambient air, but it is known that many of these compounds, such as the PAHs, are considered health risks in ambient air.

Prior to application of maximal safe exposure assumptions it would be necessary to actually identify the toxic actions of concern. The allergens are examples of the problem since for some susceptible persons no exposure would be considered without risk.

Assessment of risk from the literature

Four assessments that reviewed the information available from reasonably reliable sources are discussed below. The release of materials under ambient conditions was determined. The chemicals of concern were identified and the toxic actions listed. An attempt to determine the exposure potential was made and the human risk assessed. All four studies are limited by the application of the assessments only to the expected environmental and public health impact from crumb rubber at synthetic turf fields and the use of rubber mulch.

1.) Pediatric Environmental Health Specialty Unit, US EPA Region 8. "*Case Study of Tire Crumb Use on Playgrounds: Risk Analysis and Communication When Major Clinical Knowledge Gaps Exist.*" *Environmental Health Perspective 114 (1) 1-3 (2006).*

The report notes that children's exposures may potentially occur by ingestion of tire crumbs or water, inhalation of the dust or skin contact. Traditional published scientific literature identified one study, Birkholtz et al. (2003), which examined human and ecosystem hazards, and one or two other studies, but could not establish the products' safety for children. Essentially no specific information was available regarding exposure to crumb rubber constituents from use on a playground. In addition to discussion of potential risk with parents who call with concerns, the authors do advocate for more relevant research.

2.) Canadian Evaluation of Hazard Assessment of Tire Crumb for Use on Public Playgrounds, Air and Waste Management Assoc., 53 903-907, 2003.

A cooperative agreement developed between the Alberta Centre for Injury Control and Research and the Recycling Management Association of Alberta determined the potential exposure of children to surface runoff and puddles. The authors assumed that the potential for oral ingestion is unlikely, that the product is washed and thus free of dust and that the only exposure pathways are skin contact and ingestion. Both were deemed unlikely and were not measured. The mutagenicity of solvent extracts of the tire crumbs was used to assess the carcinogenic potential. It was concluded that the limited

response in the mutagenicity study ruled out the potential for cancer. No quantitative exposure data were collected to support either conclusion.

3.) Norwegian Institute of Public Health Study, 2006.

This study, discussed previously, used measured air levels of chemicals and an exposure model developed for participants in a building with synthetic turf. Although the study was limited by the absence of necessary toxicity data, it showed a potential for exposures and assessment of the level of risk. The approach used is more relevant for cancer risk assessment than for non-cancer risk assessment. Latex allergy was identified as the major risk. Margins of safety were calculated for each compound identified. The application of averaged exposures probably caused a 10-fold or greater reduction in the actual margin of safety in acute or short-term exposures.

4.) OEHHA Risk Assessment for Playground Exposures, January 2007

This study, described previously, considered single acute exposures by ingestion and chronic hand-to-mouth exposures for 22 chemicals found to be released by tire shreds. The individual non-cancer risk was calculated by comparison to regulatory acute exposure levels. Seven of the 13 metals tested did not have acute exposure levels, so the risk could not be determined. Five of the eight VOCs lacked comparison data and seven of the eight semi-volatiles tested lacked comparison data. Even given this limitation, there were groups of chemicals that exceeded the hazard index of 1. The cancer risk assessment compared the accepted risk level for a single lifetime exposure to recycled rubber crumbs.

Comment on the studies

These four studies provide useful information about the scale of the risk, **but none of the studies is sufficiently robust to be used in a public health safety evaluation.**

Potential for evaluation of the actual health risk

The available information is sufficient and strong enough to raise plausible questions with respect to acute toxicity for susceptible persons, and for cancer risks.

However, the status of the information about human exposures to recycled tire crumb rubber in-fill and gardening mulch is not sufficient to determine the safety of the use of the product in situations that involve continuous episodes of human exposure. There is little other than the Norwegian study to give a scale to the potential exposures. A rough approximation can be obtained from the information in the Connecticut Agricultural Experiment Station study.

Estimate of the scale of exposures to benzothiazole from tire crumb in-fill on a soccer field

The exposure potential on a soccer field could be quite large. A square foot of a field with between two and three inches of in-fill would have between five and seven kilograms of tire crumbs, translating to 11 to 15 pounds. If the findings from table 3 in the Connecticut Agricultural Experiment Station study are used as a reference, the emissions from the square foot of surface would approach four to six grams on a hot day when the surface approaches 60 degrees C (140 degrees F). Considering the actual size of the soccer fields, that would be substantial release into the ambient air. Actual exposure measurements are needed to determine the potential inhalation risks for players on the field or for spectators and nearby residents.

This same scale of analysis is needed for each of the agents shown to be released and the respirable dusts. If the tire crumbs are carried into a building or an automobile, similar analysis is necessary. EHHI has concluded that the currently available information is sufficient to raise plausible concerns for health risks, but insufficient to determine how large those risks are.

Problem Statement

The use of recycled rubber as in-fill on athletic fields, as gardening mulch or subsurface fill under playground equipment involves direct exposures of children and adults to dusts and chemicals that would be released from the tire crumbs. A review of findings from the currently available reports on health and safety found important gaps in the information needed to determine the public health and environmental risks. The following is not fully known for recycled tire products:

- All the chemicals actually present in the exposure pathways
- How great will be the release of chemicals or dust under the conditions of use
- The toxic actions of the chemicals released
- The amount of exposures from inhalation, dermal contact or ingestion.

The gaps in the available information make it difficult to determine whether the proposed use of recycled tire crumbs in playing fields or playgrounds is safe.

Synthetic fields being installed with little or no health data on health effects from rubber tire crumbs

A program to replace current grass playing fields with synthetic turf fields is underway in Connecticut and other states. The information supporting this effort essentially contains only the health benefits from reduction of injuries due to falls. The potential risk from human and environmental chemical exposures is not known. In its place are general reports with nonspecific data, such as that from the Consumer Product Safety Commission's *Handbook for Public Playground Safety*, Publication No. 325.

Although chemicals had been shown to be released from recycled tire in-fill, the Consumer Product Safety Commission (CPSC) inferred that "Oral ingestion is deemed to be low in overall hazard because ingestion of the tire crumbs on the ground is not likely and the gastrointestinal system is unlikely to be efficient in extracting toxic chemicals from tire crumbs." The CPSC report continues, "Tire crumb does not contain chemicals with high vapor pressures; thus, exposure via inhalation is deemed inconsequential and the resulting hazard is negligible.... Cancer hazard measured in *in vitro* predictive assays was deemed negative." In a single test, 3/4-inch pieces of tire chips sent to a testing laboratory to be tested with acid (stomach acid) resulted in the following report, "visual examination of insoluble residue appeared to indicate only fibrous reinforcing strands were dissolved by the hydrochloric acid. The tire rubber did not appear to be affected in any way."

Based on that test, the CPSC concludes, "Therefore if a piece of rubber is swallowed it should not cause any acute or chronic problems." The report then goes on to discuss leaching and other data based on a single test and cites references with limited

applicability to the determination of the risk from exposures. **None of the data is at the level needed for public health assessment.**

In contrast to the CPSC report, studies from the Norwegian Institute of Public Health and the Radium Hospital, Oslo, January 2006, cited information showing that dozens of volatile organic compounds are "off gassing" from tire crumb in-fill or are carried in respirable dust particles released from in-fill during playing of sports in an indoor arena. Similarly, California's Office of Environmental Health Hazard Assessment (OEHHA) *Evaluation of Health Effects of Recycled Waste Tires in Playground and Track Products,* January 2007, summarized 46 studies in the scientific literature that identified 49 chemicals released from tire crumbs. Seven of the chemicals leached from tire shreds were carcinogens. OEHHA calculated a cancer risk of 1.2 in ten million based on a ***one-time ingestion*** of the tire crumb rubber over a lifetime.

OEHHA also conducted a gastric digestion experiment that found 22 chemicals were released. Five of the chemicals released were carcinogens. OEHHA concluded that the risk would be below the one in a million risk level considered to be acceptable. However, the analysis posits that there would only be one single exposure in a lifetime and extends the cancer risk over the lifetime. This is saying that a person would have only one exposure, which in the opinion of EHHI is unlikely.

The frequency of exposures from the use of tire crumbs in playing fields and gardens is not known, but would almost certainly exceed once in a lifetime. Both the Norwegian study and the California report describe attempts to assess the overall risk from the use of tire crumbs on synthetic turf and playgrounds, respectively. In both cases, the lack of reliable exposure measures and the absence of relevant toxicological tests restrict the quantitative determination of the actual health hazards.

A report from Switzerland, *Investigation and Assessment of Synthetic Sports Surfaces in Switzerland Including Athletic and Soccer Facilities*, by Hans J. Kolitzus, IST, Switzerland, cautions that the "the real effect of sports surfaces on sites to the environment cannot be determined using lab tests." The report seems to caution that although no toxicity has been documented to date, the studies needed to evaluate the risk are not complete. EHHI concludes that neither the Norwegian study nor the OEHHA study is sufficient to determine the health risks to humans.

Occupational health data from the manufacture of tire crumbs

An occupational study in a Taiwan scrap tire shredding plant, published in 2003, *Assessment of Occupational Health Hazards in Scrap-Tire Shredding Facilities*, Yeh-Chung Chien et al., *The Science of the Total Environment*, pages 35-46, identified volatile organics and particulates in the air that were "frame shift" mutagens. Chemical analysis of the airborne particulates confirmed the presence of amines, aniline, quinoline, amides and benzothiazole. While the report cited epidemiologic studies of rubber works showing acute and chronic respiratory effects, including reduced lung capacity, and increased risk of laryngeal, bladder, lung and skin cancers, no health studies had been done in workers in tire-shredding plants. With the exception of the more volatile solvents, similar types of chemicals are found in shredding facilities and manufacturing plants.

The assessment of scrap tire shredding facilities listed materials present in the air. The volatile organics found include styrene, benzothiazole, phthalate esters and naphthalene. Airborne particulates in the respirable range constituted amines, aniline, quinoline, amides and benzothiazole. Mass spectrographic analysis identified eight chemicals in the air, categorized as aromatic, ketone, monomer PAHs and esters. Octane, decane, benzene, toluene ethylbenzene, xylenes and ethyl methyl benzenes were also found. The particulate contained 12 types of chemicals, including three amines, two additives, two amides, two PAHs, two acids and two esters. The results indicated that the organic-dissolved portion of rubber particles included nitre-containing vulcanization stabilizers and accelerators, as well as process degradation products.

EHHI concludes that the chemicals found in the air in tire-shredding facilities should also be considered to be potential contaminants at sites that use crumb rubber in-fill and gardening mulch, but at lower concentrations. The studies cited in the Norwegian and California reports support this conclusion.

Playground safety reports

The OEHHA of the California Department of Health prepared a report on potential risks from the use of recycled tire materials on playgrounds. That study evaluated the release of chemicals that could cause toxicity on dermal contact in children.

The report contains a literature review of studies that measured the release of chemicals from recycled tires in laboratory settings and field studies. Of the 49 chemicals listed, seven were carcinogens. Twenty-two chemicals were identified in a study that modeled gastric digestion. As noted earlier, a component of the OEHHA study that looked at hand-to-mouth activity using wipe samples found four PAHs and one metal, zinc. This study identified 46 separate laboratory or field studies that reported VOCs, semi-volatiles and metals, and also mentioned particulate collection. There were three general groups of substances released—15 metals, 20 volatile organic compounds and 14 semi-volatile compounds.

A widely reported and cited study by Birkholz, Belton and Guidotti, "Toxicological Evaluation for the Hazard Assessment of Tire Crumb for Use in Public Playgrounds," *Journal of Air and Waste Management Association* 53, 903-907 (2003), concludes that there is little potential for exposure to cause adverse health effects in children and that no chromosome-damaging chemicals were present with solvent extraction. It does note slight aquatic toxicity. EHHI is concerned about the limited level of the exposure assessment performed in this study and by the sharply different findings from those found in more detailed studies that do identify both the presence of carcinogenic chemicals and mutagenic responses in recycled tire crumbs.

Other highly relevant research

Findings from two studies reported on the internet are important. The first is a report by William Crain and Junfeng Zhang (2007) that found carcinogenic PAHs released from tire crumb in-fill at levels that exceeded New York State Contaminated Soil limits. The findings of that study are totally consistent with the work cited by the Norwegian report, the California OEHHA report and the occupational report from Taiwan.

The second study, by Stuart Gaffin at Columbia University's Center for Climate Systems Research, determined that the temperature present on playing field tire crumb in-fill during summer afternoons approached 160 degrees F.

The findings in the study in Norwegian indoor sports facilities show a strong increase in the release of chemicals into the air with increased temperature, although none

of the arenas in the study approached temperatures as high as those reported in New York.

In Korea, the Ministry of Education and Human Resources Development has initiated a study of the safety of synthetic turf fields that have been installed in 605 elementary, middle and high schools. The study is a response to complaints from teachers of nose and eye irritation and contact dermatitis and complaints of headaches from both teachers and students.

Other reports in the literature cite current ongoing work to address the public and governmental concerns about the potential exposure to recycled tires. One report from Sweden concluded the use of recycled tire in-fill should be discontinued based on a latex allergy concern.

Although the California report cited an animal study that did not find a positive response in an animal study, there is concern that types of allergic response cannot be properly tested in animal skin exposure protocols. It is likely that, when allergens are inhaled by persons sensitized to latex, a systemic rather than contact response will be induced. Higher levels of latex allergy have been found in persons who live near highways. This is because the source of latex is in the tires.

EHHI concludes that given the significance of the potential health concerns, the findings that there are toxic chemicals and particulates present in areas that use recycled tires, the serious gaps in exposure information and the partial information on the toxic actions of the chemicals released into the environment, further assessment is absolutely necessary if the public is to be protected.

Health hazard assessment

The purpose of the health assessment is a systematic analysis of the potential for human health effects from chemicals released from environmental media. Health policy is derived from systematic evaluation of exposure and toxicity information. Important policy questions raised with respect to tire rubber require analysis of both exposure potential and the toxicity of the mixture of components in air, soil and dust. The question is thus addressed within the context of the contaminants of concern associated with exposure to the materials released, the health concerns of the communities with potential

exposure and the identification and quantitative assessment of the pathways of completed and potential exposures. The integration of these components constitutes a health hazard assessment on which health recommendations are based.

Exposure Analysis

In order to determine the potential exposures, the first steps are to determine the completed pathways and the chemical agents released into the environment media.

Identification and assessment of the pathways of completed and potential exposures. There are four components of completed exposure pathways:

- Environmental media and transport
- Points of exposure
- Routes of exposures
- Receptor population

Synthetic turf exposure

With respect to tire crumbs on synthetic turf or rubber mulch, the environmental media are the crumbs that release compounds that are potentially carried to humans through direct contact or airborne dust. Indirect contact through surface or ground water runoff or contamination of local drinking water wells is part of the concern. Points of exposure occur primarily at playing fields during athletic activities, application of rubber mulch to gardens or contamination of schools, vehicles and homes due to transport of the materials on clothing and shoes.

Certain activities involve higher potential for exposures than others, such as playing contact sports or calisthenics that involve stretching on the ground. Inhalation of respirable particulates was found to be an important pathway in occupational settings and in closed arenas with synthetic turf fields.

Thus there are three routes of direct human exposure, but the primary one appears to be inhalation of dust and vapors. Dermal contact is also possible for those compounds that are leached from the tire materials or those that are allergens. Finally, ingestion by children or infants who come into contact with the materials will occur through

accidental swallowing of the tire crumbs. Release from material in shoes has also been posited. Receptor populations include the student body of schools, teachers or members of athletic teams and persons coaching or observing the contests. Infant children near the field may ingest the crumbs.

Gardening exposures

In addition, gardeners and landscape personnel would similarly have dermal and potential inhalation contact with the rubber materials and material in dust or vapors.

There are no studies in the peer reviewed academic literature that determine the human exposures from synthetic turf fields or mulching activities. Reports have been prepared for state and other official regulatory bodies that attempted to estimate levels of human exposures on playground and synthetic turf. One study at an indoor location suggests that up to 50% of the PM_{10} or smaller particulate is released into the air. Although the rubber tire mulch and crumbs have been marketed as inert materials, off-gassing has been conclusively demonstrated by the Norwegian study. Gastric breakdown has also been shown by the OEHHA study.

Chemical agents released into the environments (contaminants of concern) associated with the rubber tire crumbs and rubber mulch

The purpose of this step in the health assessment is to identify chemical exposures that are likely to occur and determine the individual toxicity.

Four components that identify contaminants of concern include identification of:

- the compounds present
- the toxic actions of the individual compounds
- the toxic potency of compounds
- the maximal safe exposures levels

Studies that should be viewed with caution

Some risk assessments infer minimal health risk based on an assumption that exposures do not occur or are minimal, or that recycled tire crumbs are stable in the GI tract. The studies cited in the background from Norway and California OEHHA clearly

show that **neither** assumption is correct. The Connecticut Agricultural Experiment Station Report, 2007, conclusively identified four compounds that are released under ambient conditions in aqueous media. Other reports, as well, show that release of volatiles occurs under ambient conditions.

One study tested the use of tire crumbs on playgrounds (Birkholtz et al., Air and Waste Management Association 53, 903-907, 2003). Exhaustive extraction of tire crumbs was used to obtain material for genotoxicity tests. Marginal toxicity—a 1.5 fold increase in response for some of the test species—was reported. Birkholtz concludes that "no DNA or chromosomal-damaging chemicals were present." The authors go on to conclude that "ingestion of tire crumbs by small children will not result in unacceptable hazard of contracting cancer."

In the human health hazard discussions, the authors further speculate that "Tire crumb does not contain chemicals with high vapor pressures; thus, exposure via inhalation was deemed inconsequential and the resulting hazard negligible." The authors continue, "A carrier solvent more efficient than water would be needed to extract toxic chemicals from tire crumb in quantity and a non-polar vehicle skin layer for significant absorption would be required to penetrate protective skin layers."

EHHI notes that the confirmed findings of emissions from aqueous solution at temperatures found in ambient exposures from the Connecticut Agricultural Experiment Station study would cause one to view that statement with extreme caution. Actual test data show that the rationale that the material is inert and not available is based on the flawed premise of biological unavailability of carcinogens.

Summary and conclusions

- The Connecticut Agricultural Experiment Station study conclusively demonstrates that the tire crumbs and tire mulch release chemical compounds into the air and ground water. Thus, tire crumbs constitute a chemical exposure for humans and the environment.

- It is clear the recycled rubber crumbs are not inert, nor is a high temperature or severe solvent extraction needed to release metals, volatile organic compounds or semi-volatile organic compounds. The release of airborne chemicals and dust is well-established by the current information. The Connecticut Agricultural Experiment Station research conclusively demonstrates that release can occur under ambient conditions experienced in the summer in Connecticut.

- Those published health assessments that indicate *de minimis* risk should not be applied to the synthetic turf paradigm and may not be appropriate for playgrounds with open layers of recycled tire crumbs.

- Health endpoints of concern are numerous, including acute irritation of the lungs, skin and eyes, chronic irritation of the lung, skin and eyes. Knowledge is somewhat limited about the effects of semi-volatile chemicals on the kidney, endocrine system, nervous system, cardiovascular system, immune system, developmental effects and the potential to induce cancers.

- There are still data gaps that need to be filled in and additional studies are warranted.

- It is prudent to conclude that there will be human exposures to chemicals released during the use of synthetic turf fields.

- The excess amount of zinc in the rubber tire mulch makes it unacceptable to be used in gardens.

Recommendations

1.) There is enough information now concerning the potential health effects from chemicals emanating from rubber tire crumbs to place a moratorium on installing

any new fields or playgrounds that use ground-up rubber tires until additional research is undertaken.

2.) Exposures to already installed synthetic turf fields that contain rubber tire crumbs should be limited pending the development of more definitive information.

3.) People who have a history of allergic reactions should avoid exposures to tire crumb rubber until additional information is available to assure that the released materials will not cause allergic reactions.

4.) When weighing the exposures of children to recycled tire crumb rubber there should be measures to reduce their exposures over time.

5.) The State of Connecticut should consider a detailed analysis of the health and environmental risks from recycled rubber in all its proposed uses.

6.) A detailed epidemiologic study focused on the irritant and the systemic actions of the semi-volatile compounds released should be conducted.

7.) The North Carolina Department of Agriculture's study shows that ground-up rubber tire mulch increases the potential of zinc toxicity and indicates that it is unsuitable for use in production of nursery plants. Therefore, EHHI is in agreement with this study and others that recommend ground-up rubber tire mulch not be used for gardens.

Appendix 1

Testing methods

Samples of gardening mulch and tire crumbs were obtained for laboratory evaluation. One set of experiments tested the **leaching potential** of the metals from samples of tire crumb in-fill and one from commercial rubber mulch. The second set of experiments tested the **chemicals released** from the tire crumbs and the commercial rubber mulch. Ten metals were leached from the samples of tire crumbs and tire mulch in the first experiment. Twenty-five chemical species were identified with 72% to 99% certainty in the mass spectrometry and gas chromatography analysis in the second experiment. Nineteen chemicals were identified with over 90% certainty and five at over 98% certainty. Confirmatory studies provide a definitive identification of four of the major chemicals released. Below is an excerpt from the Connecticut Agricultural Experiment Station's report on their methods.

> "To determine if materials of interest are extractable from the crumbs, portions of the crumb rubber were soaked over time in distilled, deionized water at ambient laboratory temperature in capped high density polyethylene (HDPE) jars. Approximately 17 g of crumbs were soaked statically in 50 ml water for seven weeks. After this period the leachate was filtered and 1.5 ml transferred to ALS vials. The same SPME procedure was carried out as described above. A typical TIC trace for the headspace analysis is shown in Figure 4.
>
> Figure 4 should be compared with Figure 3. Although relative amounts of the compounds of interest differ under the two experimental conditions, the same compounds are noted in both Figures. If the SPME fiber is immersed directly into the leachate rather than exposed to the headspace over the leachate and then desorbed in the GC inlet, the same set of compounds as shown in Figure 4 was detected.
>
> We now provide the experimental procedures used to determine if elements are leachable into aqueous solution from the crumbs. In this case 2.0 grams of crumbs were transferred into 40 ml of water in 50 ml centrifuge tubes. The tubes were sealed and agitated on a wrist action shaker at ambient temperature for 18 hours. Following this agitation the tubes were centrifuged for 10 minutes at 3000 rpm and the leachate was analyzed using inductively coupled plasma mass spectrometry (ICP/MS, Agilent model 7500ce). In a second regime the leaching water was

acidified to pH 4.2 prior to the 18-hour agitation. This procedure is based on conditions recommended in EPA SW-846 Method 1312.

The laboratory data presented here support the conclusion that under relatively mild conditions of temperature and leaching solvent, components of crumb rubber produced from tires (i) volatilize into the vapor phase and (ii) are leached into water in contact with the crumbs. We note with interest that when we placed the black crumbs in direct sunlight at an exterior air temperature of 88° F, a thermometer inserted directly into the crumbs registered 55° C (=131° F). Selection of 60° C, therefore, is not beyond a reasonable temperature range accessible under field conditions."

EHHI began its assessment of the health effects from ground-up rubber tire crumbs by identification of the chemicals released from tire crumbs and gardening mulch under conditions that approximate their uses.

Information available from reliable sources, including published literature, documented research and official reports was reviewed. The potential for release of chemicals under typical conditions of use was determined. Chemicals of concern were identified and the toxic actions listed.

These studies conclusively demonstrate that the tire crumbs and the tire mulch release chemical compounds into the air and ground water. Thus, tire crumbs constitute a chemical exposure for humans and for the environment.

Appendix 2

Connecticut Agricultural Experiment Station's Report
EXAMINATION OF CRUMBRUBBER PRODUCED FROM RECYCLED TIRES

http://www.ct.gov/caes/lib/caes/documents/publications/fact_sheets/examinationofcrumbrubberac005.pdf

Appendix 3

The California Office of Environmental Health Hazard Assessment (OEHHA) Report *Evaluation of Health Effects of Recycled Waste Tires in Playground and Track Products.* January 2007, Table 1, Pages 8-12

http://www.ciwmb.ca.gov/Publications/Tires/62206013.pdf

Appendix 4

The Norwegian Public Health Report, *Artificial Turf Pitches – An Assessment of the Health Risks for Football Players, Prepared by Norwegian Institute of Public Health and the Radium Hospital, Oslo, January 2006.* Pages 13-16, Tables 4,5,6,7, and 8.

http://www.isss.de/conferences/Dresden%202006/Technical/FHI%20Engelsk.pdf

Appendix 5

The Swedish Chemical Agency Report recommending that rubber granules from waste tires not be used.

https://www.kemi.se/upload/Trycksaker/Pdf/Faktablad/FbSyntheticTurf.pdf

Appendix 6

Ground Rubber: Potential Toxicity to Plants, by M. Ray Tucker, Agronomist
Media Notes for North Carolina Growers, Department of Agriculture and Consumer Services.

http://www.ncagr.com/agronomi/pdffiles/rubber.pdf
http://www.ncagr.com/agronomi

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This is an official
CDC HEALTH ADVISORY

Distributed via Health Alert Network
Wednesday, June 18, 2008, 16:10 EDT (4:10 PM EDT)
CDCHAN-00275-2008-06-18-ADV-N

Potential Exposure to Lead in Artificial Turf: Public Health Issues, Actions, and Recommendations

Public Health Issues

In the course of conducting a routine health investigation at a metal facility in Newark, NJ, the New Jersey Department of Health and Senior Services (NJDHSS) and the Agency for Toxic Substances and Disease Registry (ATSDR) tested a nearby community athletic field for lead contamination. Samples taken from the field showed high levels of lead in the field dust, but the lead did not come from the scrap metal facility.

The Centers for Disease Control and Prevention (CDC) is partnering with its sister-agency, ATSDR, to monitor this situation because of CDC's expertise in lead poisoning prevention.

After determining that the lead source was the artificial turf, NJDHSS began to test other artificial turf fields looking for similar high lead levels in artificial turf fibers. These findings raised concerns about potentially high lead levels in artificial turf used in other locations including fields and playgrounds. NJDHSS tested a limited sample of athletic fields in New Jersey. Any questions regarding the specific fields tested should be directed to NJDHSS.

As determined by NJDHSS, limited sampling of additional athletic fields in New Jersey and commercial products indicates that artificial turf made of nylon or nylon/polyethylene blend fibers contains levels of lead that pose a potential public health concern. Tests of artificial turf fields made with only polyethylene fibers showed that these fields contained very low levels of lead.

Information provided by NJDHSS to CDC and ATSDR indicates that some of the fields with elevated lead in either dust and/or turf fiber samples were weathered and visibly dusty. Fields that are old, that are used frequently, and that are exposed to the weather break down into dust as the turf fibers are worn or demonstrate progressive signs of weathering, including fibers that are abraded, faded or broken. These factors should be considered when evaluating the potential for harmful lead exposures from a given field.

The risk for harmful lead exposure is low from new fields with elevated lead levels in their turf fibers because the turf fibers are still intact and the lead is unlikely to be available for harmful exposures to occur. As the turf ages and weathers, lead is released in dust that could then be ingested or inhaled, and the risk for harmful exposure increases. If exposures do occur, CDC currently does not know how much lead the body will absorb; however, if enough lead is absorbed, it can cause neurological development symptoms (e.g. deficits in IQ). Additional tests are being performed by NJDHSS to help us better understand the absorption of lead from these products.

In general, children less than 6 years old are more likely to be affected by lead than adults because of increased contact with lead sources in the environment, including lead contaminated house dust and soil. Children also absorb lead more easily. Children's developing nervous systems are also more susceptible to the adverse health effects of lead including developmental delay and behavioral problems.

It should be emphasized that although turf testing has been limited to the state of New Jersey, no cases of elevated blood lead levels in children have been linked to artificial turf on athletic fields in New Jersey and elsewhere. Concerned parents should talk to their child's pediatrician about potential and known sources of lead in their children's environment and whether their children should have a blood lead test. This is a simple blood test that is paid for by most private insurers and by Medicaid.

NJDHSS has asked the United States Consumer Product Safety Commission (CPSC) to investigate this potential problem and CDC and ATSDR are currently waiting for information from CPSC to help guide future public health recommendations and actions.

Interim Public Health Actions Related to Testing Artificial Turf Products and Reducing Potential Exposures to Lead

NJDHHS's testing of artificial turf fields was limited and only sampled turf containing nylon. Since NJDHHS, CDC and ATSDR did not test fields composed of substances other than nylon and nylon/polyethelene blend, we do not know if lead is also a component in other types of artificial turf. Additionally, not necessarily all turf made of nylon contains elevated amounts of lead.

CDC has long recommended ***the elimination of all nonessential uses of lead.*** Because it is unclear whether all artificial turf contains lead at this time, CDC and ATSDR only recommend testing artificial turf fields that appear worn or weathered.

As a precaution, until further guidance is available from CPSC and until we have more information about the absorption of lead from artificial turf products and its capability of harm, CDC and ATSDR recommend:

- Testing turf that has fibers that are abraded, faded or broken, contains visible dust, and that is made from nylon or nylon-blend fibers. Information about testing is provided later in this alert.
  - If the dust contains more than 400 ppm lead, do not allow turf access for children under the age of 6 years.
  - If access is restricted, care should be taken to ensure that alternative sites contain lead levels less than 400 ppm.
- Not testing turf made from polyethylene-only fibers. This recommendation is based on currently available data.
- Not testing turf made from nylon or nylon blends that is not worn and does not contain visible dust. These fields should be routinely monitored for wear and dust generation.
- Replacing fields as soon as practicable if worn and dusty, as a precautionary measure.

CDC recommends testing children's blood lead levels in accordance with state guidelines. Concerned parents/caregivers should consult their medical providers for further information.

General Recommendations on the Use of Fields with Artificial Turf

At this time, CDC does not yet understand the potential risks associated with exposure to dust from worn artificial turf. The following precautions can be taken to minimize any potential risk.

- Field managers should consider implementing dust-suppression measures. Suggestions for dust-suppression methods can be found at NJDHSS's website, which is provided in the additional information section.
- Children ages 6 and younger are most susceptible to lead's harmful health effects. To protect the public, in particular young children, consider posting signs indicating that:
  1. After playing on the field, individuals are encouraged to perform aggressive hand and body washing for at least 20 seconds using soap and warm water.
  2. Clothes worn on the field should be taken off and turned inside out as soon as possible after using the field to avoid tracking contaminated dust to other places. In vehicles, people can sit on a large towel or blanket if it is not feasible to remove their clothes. These clothes, towels, and blankets should be washed separately and shoes worn on the field should be kept outside of the home.
  3. Eating while on the field or turf product is discouraged.
  4. Avoid contaminating drinking containers with dust and fibers from the field. When not drinking, close them and keep them in a bag, cooler, or other covered container on the side of the field.

General Lead Poisoning Prevention Recommendations

Especially in houses where children are present, parents, day care providers and other child care providers should **follow lead safety practices** regardless of the type of playing surface. These practices can help prevent children from being exposed to the many sources of lead in the environment.

1. Wash children's hands frequently and always before they eat.
2. Do not eat food or use pacifiers that have been dropped on the floor or outside.
3. Remove shoes when entering the house or use door mats.
4. Have your house inspected for lead if it was built before 1978.
5. Use lead-safe work practices when doing work that disturbs lead-painted surfaces.

Lead Testing of Artificial Turf Fields

Facility managers who choose to have the turf at a field tested for lead should contact their local or state department of health and/or environment about appropriate sample collection and analytic methods. CDC and ATSDR recommend using appropriate U.S. Environmental Protection Agency, National Institute for Occupational Safety and Health, or American Society for Testing and Materials methods.

Additional Information

For additional information about testing, dust suppression measures, and other topics related to NJDHSS's work to address lead in artificial turf visit NJDHSS's artificial turf website at http://www.state.nj.us/health/artificialturf/index.shtml.

For a list of state health departments, visit the Association of State and Territorial Health Officers (ASTHO) site at http://www.astho.org/index.php?template=regional_links.php. ASTHO also provides a list of state environmental health directors at: http://www.astho.org/index.php?template=enhancing_environmental_health_s.html.

The U.S. Consumer Product Safety Commission regulates consumer products, including artificial turf. Additional information about CPSC and artificial turf can be found at http://www.cpsc.gov.

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This page last reviewed: November 10, 2003

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February 29, 2008

The Latin School of Chicago

Donald W. Firke

Head of School

Dear Mr. Firke,

Thank you for acknowledging my letter. Perhaps, with an open mind approach, it could inaugurate the start of a productive dialogue with the community, one that should have preceded any contract to construct a soccer field and served to help formulate a project that would be acceptable and beneficial to all concerned. This is what was taking place in 2002 when a hardened soccer field was first proposed and overwhelmingly rejected by your neighbors. I know that this time around CKLPP, now presented with a Meigs Field like midnight blitzkrieg, has already received over 1000 protest petition signers and contributors to a legal fund

and the numbers multiply every day. But I feel that most individuals do not want to be enemies of Latin; they are enemies of the design and extent and secret negotiation of the intended construction that may benefit Latin but will be injurious to the public park. I note that the contract between Latin and the Park District does permit cancellation for "unforeseen events". I suggest that it would be in the best interests of Latin to take advantage of this provision and start over by this time reaching out to the community for input and collaboration instead of provoking a "town/gown" dispute that will not go away and ultimately harms both Latin and Lincoln Park. And I suspect the Park District may also find it politically convenient to agree to a do-over.

There is another factor that has come to light that may directly affect the health and safety of the students of the Latin School. As you know, the parcel of Lincoln Park South Field which was chosen to be the location of the Latin Soccer Field is immediately adjacent to heavily trafficked Lake Shore Drive and adjacent local streets. You may also have learned that many years ago tests of park areas in similar locations found excessive and dangerous amounts of lead and other poisonous deposits which collect from the exhaust emissions of motor vehicles, as well as prevailing wind

patterns which bring atmospheric borne pollution from inland factories an deposit them on the lakefront.

CKLPP requested that the Park District produce all the professional and environmental studies related to the proposed construction of the soccer field and received the startling response that there are "no documents". This appears to mean that the Park District did not conduct or record current soil safety tests, and did not seek or obtain a medical and/or engineering study of the effect of the nearby traffic on the quality of the ambient air which would be breathed in by users of the field, and in particular Latin students who would be in that location daily for extended periods of time.

This is especially shocking since the City understands the dangers and has an aggressive lead poisoning prevention and treatment program in operation throughout the city. Perhaps you have obtained relevant data that the City apparently does not have. But this is a matter that should be of greatest concern to you as Head of School.

So may I further suggest that you consider calling for a personal meeting with representatives of CKLPP to discuss all of the soccer field issues from the beginning in search of reasonable solutions

without the sword of imminent soccer field construction hanging over the community.

Very truly,

HERBERT L. CAPLAN

July 21, 2008

An Open Letter to President Gery Chico and Supt. Tim Mitchell of the Chicago Park District.

Dear President Chico and Superintendent Mitchell:

As a long time resident of Chicago and user of Chicago parks I have become increasingly aware of the use of artificial turf (AT) in playfields throughout the park system. Recently I have also become aware of disturbing disclosures about health and safety issues connected with AT, and of efforts throughout the country to halt further use of these materials pending more investigation.

At least one type of AT was the subject of a June 18, 2008 Advisory from the U. S. Center for Disease Control and Prevention (CDC) regarding potentially dangerous lead exposures. I have attached a copy of this CDC Advisory for your convenience.

The topic of AT was reportedly been scheduled for hearing this March and again in June before the City Council Committee on Parks and Recreation but deferred when it was learned that that many members of the public wished to testify.

I have therefore chosen to submit copies of this letter to several members of the City Council and others as well so that more open discussion of these matters might continue.

To date, and to the best of my knowledge, documentation of the following has not been available to the public:

1) Summary of parks where AT is now in place including the exact type of AT used and the age and condition of these installations.

2) Summary of parks where AT installations are currently proposed, with the exact type of AT to be used.

The public is entitled to this information in order to have meaningful input on decisions concerning existing and proposed AT. Although AT has been used on athletic fields throughout the world, lately there have been reports of unintended negative consequences which vary depending on the materials employed. These consequences, plus the cost of AT as compared with natural grass, should spur reevaluation of existing and planned AT installations in Chicago.

The CDC Advisory of June 18, 2008 (noted above) noted possible lead exposure risk in AT made of nylon or nylon/polyethylene blends. If AT using nylon or a nylon/polyethylene blend is now installed in any city park it should immediately be inspected for signs of aging, wear or weathering, the factors in lead exposure potential. If any of these are present, immediate steps need to be taken according to the CDC guidelines.

Additionally, CDC has made general recommendations on the use of fields with AT, and these should be made public for widespread implementation, and, in addition, offers guidance for facility managers choosing to have AT tested for lead.

Given this information, it seems prudent to suggest that any plans to use any AT in a park facility, and particularly of the sort referenced in this CDC Advisory, should be reevaluated to take into account the need for appropriate inspection and timely replacement.

While the major lead exposure risks cited by CDC would be to children under six, it is clear that no youngster should be subject to this exposure. And while children under six may not use the fields for organized sports, there is a likelihood that they would, at times, play in these areas.

Besides the nylon or nylon/polyethylene based AT referenced specifically in the recent CDC advisory, other materials are used for AT. Some are made from various kinds of rubber. (There are other kinds of surfaces as well, not mentioned here, but which may be, for all the public knows, now in use or proposed for use by Chicago Park District.)

Both synthetic fiber and rubber-based AT materials have been suspect in exposures including heavy metals associated with nervous system damage, birth defects, and other health problems.

Some AT materials have been associated with more extensive and more severe abrasions than occur with natural grass. Such abrasions may be the entry point for Methicillin Resistant *Staphylococcus aureus* (MRSA). MRSA bacillus may reside mainly in athletic gear and clothing, but finds its portal of entry through abraded or otherwise injured skin. With community acquired life-threatening MRSA infections increasing among youngsters it would seem prudent to use athletic surfaces offering the least potential for such abrasions.

While bacterial risk may be reduced to some extent by the use of various disinfectant products, these too have their health and environmental risks.

The risk of injury to bones and joints has also been raised in connection with AT. Reportedly some athletes prefer not to play on such surfaces because of this risk. Although injury may occur on any surface, it would be well to ask whether AT surfaces, in use or proposed, present particular hazards, especially for the young. For some AT surfaces, specific kinds of shoes are recommended to reduce the possibility of bone and joint injury. Since we do not know exactly what AT materials are used or will be used in Chicago parks, it is impossible to offer any meaningful public input on these installations which will be both costly the public and which will also affect the health and safety of our young people.

Heat is another problem associated with certain AT materials. AT-covered athletic fields reportedly generate high heats posing dehydration and heat stroke risks to young athletes and some have AT-covered fields even required irrigation for cooling. Chicago can be warm in spring and fall, and since fields are used even in hot summer this should be considered.

This is but a brief overview of just a few of the health consequences to young people associated with AT. There are other factors important to the public yet too numerous to cover here associated with AT. But cost deserves brief mention. AT is considerably more expensive than grass to install, and any savings gained in annual maintenance costs could be wiped out by the need to replace AT periodically to avoid toxic exposures associated with material breakdown.

Similarly, this letter does not discuss threats to the environment, to bird and plant life in the vicinity of AT and the materials used to clean and maintain it, but these threats should be publicly examined and they could be once the public knew what materials were in use or currently planned.

The bottom line is that the public needs to know. The Chicago Park District claims that materials used now and to be used in the future are "safe." But given the increasing volume of data on hazards associated with various kinds of AT materials, such a summary statement, devoid of detailed information about the materials involved, the studies used in the decision-making process, and the sources consulted, is simply insufficient to support an important matter of public health and safety involving all the children of Chicago.

Respectfully submitted,

Joan Levin, JD, MPH
Chicago
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Great Lakes Centers for Occupational
and Environmental Safety and Health

World Health Organization
Collaborating Centre

October 15, 2008

To Whom It May Concern:

We are writing to express our concern about the potential risk to children's health caused by the construction of an artificial turf field in Lincoln Park. Artificial turf fields using shredded tires as fill, commonly referred to as "tire crumb" have increased in popularity in recent years due to their decreased need for maintenance and watering. While we applaud the construction of additional recreational facilities for children, we have concerns over the possible effects on children who use these types of fields for sports practices and competitions.

The primary concerns relating to exposure to artificial turf fields include:

- Potential exposure to lead. Lead is a well-known human toxicant and has been found on several artificial turf fields in New Jersey. The U.S. Centers for Disease Control and Prevention have issued an advisory about potential lead exposure to children from artificial turf fields (Attachment 1). We believe that the Chicago Park District should determine whether a lead hazard exists before the artificial turf field is installed.
- High heat. Several studies have shown that temperatures on artificial turf fields can reach levels that may pose a risk to children (Attachment 2).
- MRSA skin infections. Bacteria from humans do not break down on artificial turf fields. Therefore, the abrasions resulting from falls on the fields, which are often worse than those causes by falling on grass, are at risk for bacteria exposure and infection.

We advise that the City of Chicago should conduct an assessment of the environmental health risks of the artificial turf field in Lincoln Park before continuing with its installation. We believe that the data collected by multiple researchers and the U.S. Centers for Disease Control and Prevention demonstrate the need to conduct such a risk assessment. Until a risk assessment is conducted, we strongly urge park planners to stick with regular grass fields instead of installing a product that may harbor bacteria, function as a heat sink, and may contain chemicals which are hazardous to children.

Sincerely,

Susan Buchanan, MD, MPH
Assistant Director, Pediatric Environmental Health Specialty Unit
University of Illinois at Chicago School of Public Health

Daniel Hryhorczuk, MD, MPH
Professor and Director
Great Lakes Center for Occupational and Environmental Safety and Health
University of Illinois at Chicago School of Public Health

Attachment 1.

This is an official
CDC HEALTH ADVISORY

Distributed via Health Alert Network
Wednesday, June 18, 2008, 16:10 EDT (4:10 PM EDT)
CDCHAN-00275-2008-06-18-ADV-N

Potential Exposure to Lead in Artificial Turf: Public Health Issues, Actions, and Recommendations

Public Health Issues

In the course of conducting a routine health investigation at a metal facility in Newark, NJ, the New Jersey Department of Health and Senior Services (NJDHSS) and the Agency for Toxic Substances and Disease Registry (ATSDR) tested a nearby community athletic field for lead contamination. Samples taken from the field showed high levels of lead in the field dust, but the lead did not come from the scrap metal facility.

The Centers for Disease Control and Prevention (CDC) is partnering with its sister-agency, ATSDR, to monitor this situation because of CDC's expertise in lead poisoning prevention.

After determining that the lead source was the artificial turf, NJDHSS began to test other artificial turf fields looking for similar high lead levels in artificial turf fibers. These findings raised concerns about potentially high lead levels in artificial turf used in other locations including fields and playgrounds. NJDHSS tested a limited sample of athletic fields in New Jersey. Any questions regarding the specific fields tested should be directed to NJDHSS.

As determined by NJDHSS, limited sampling of additional athletic fields in New Jersey and commercial products indicates that artificial turf made of nylon or nylon/polyethylene blend fibers contains levels of lead that pose a potential public health concern. Tests of artificial turf fields made with only polyethylene fibers showed that these fields contained very low levels of lead.

Information provided by NJDHSS to CDC and ATSDR indicates that some of the fields with elevated lead in either dust and/or turf fiber samples were weathered and visibly dusty. Fields that are old, that are used frequently, and that are exposed to the weather break down into dust as the turf fibers are worn or demonstrate progressive signs of weathering, including fibers that are abraded, faded or broken. These factors should be considered when evaluating the potential for harmful lead exposures from a given field.

The risk for harmful lead exposure is low from new fields with elevated lead levels in their turf fibers because the turf fibers are still intact and the lead is unlikely to be available for harmful exposures to occur. As the turf ages and weathers, lead is released in dust that could then be ingested or inhaled, and the risk for harmful exposure increases. If exposures do occur, CDC currently does not know how much lead the body will absorb; however, if enough lead is absorbed, it can cause neurological development symptoms (e.g. deficits in IQ). Additional tests are being performed by NJDHSS to help us better understand the absorption of lead from these products.

In general, children less than 6 years old are more likely to be affected by lead than adults

because of increased contact with lead sources in the environment, including lead contaminated house dust and soil. Children also absorb lead more easily. Children's developing nervous systems are also more susceptible to the adverse health effects of lead including developmental delay and behavioral problems.

It should be emphasized that although turf testing has been limited to the state of New Jersey, no cases of elevated blood lead levels in children have been linked to artificial turf on athletic fields in New Jersey and elsewhere. Concerned parents should talk to their child's pediatrician about potential and known sources of lead in their children's environment and whether their children should have a blood lead test. This is a simple blood test that is paid for by most private insurers and by Medicaid.

NJDHSS has asked the United States Consumer Product Safety Commission (CPSC) to investigate this potential problem and CDC and ATSDR are currently waiting for information from CPSC to help guide future public health recommendations and actions.

Interim Public Health Actions Related to Testing Artificial Turf Products and Reducing Potential Exposures to Lead

NJDHHS's testing of artificial turf fields was limited and only sampled turf containing nylon. Since NJDHHS, CDC and ATSDR did not test fields composed of substances other than nylon and nylon/polyethelene blend, we do not know if lead is also a component in other types of artificial turf. Additionally, not necessarily all turf made of nylon contains elevated amounts of lead.

CDC has long recommended ***the elimination of all nonessential uses of lead.*** Because it is unclear whether all artificial turf contains lead at this time, CDC and ATSDR only recommend testing artificial turf fields that appear worn or weathered.

As a precaution, until further guidance is available from CPSC and until we have more information about the absorption of lead from artificial turf products and its capability of harm, CDC and ATSDR recommend:

- Testing turf that has fibers that are abraded, faded or broken, contains visible dust, and that is made from nylon or nylon-blend fibers. Information about testing is provided later in this alert.
  - If the dust contains more than 400 ppm lead, do not allow turf access for children under the age of 6 years.
  - If access is restricted, care should be taken to ensure that alternative sites contain lead levels less than 400 ppm.
- Not testing turf made from polyethylene-only fibers. This recommendation is based on currently available data.
- Not testing turf made from nylon or nylon blends that is not worn and does not contain visible dust. These fields should be routinely monitored for wear and dust generation.
- Replacing fields as soon as practicable if worn and dusty, as a precautionary measure.

CDC recommends testing children's blood lead levels in accordance with state guidelines. Concerned parents/caregivers should consult their medical providers for further information.

General Recommendations on the Use of Fields with Artificial Turf

At this time, CDC does not yet understand the potential risks associated with exposure to dust from worn artificial turf. The following precautions can be taken to minimize any potential risk.

- Field managers should consider implementing dust-suppression measures. Suggestions for dust-suppression methods can be found at NJDHSS's website, which is provided in the additional information section.
- Children ages 6 and younger are most susceptible to lead's harmful health effects. To protect the public, in particular young children, consider posting signs indicating that:
  1. After playing on the field, individuals are encouraged to perform aggressive hand and body washing for at least 20 seconds using soap and warm water.
  2. Clothes worn on the field should be taken off and turned inside out as soon as possible after using the field to avoid tracking contaminated dust to other places. In vehicles, people can sit on a large towel or blanket if it is not feasible to remove their clothes. These clothes, towels, and blankets should be washed separately and shoes worn on the field should be kept outside of the home.
  3. Eating while on the field or turf product is discouraged.
  4. Avoid contaminating drinking containers with dust and fibers from the field. When not drinking, close them and keep them in a bag, cooler, or other covered container on the side of the field.

General Lead Poisoning Prevention Recommendations

Especially in houses where children are present, parents, day care providers and other child care providers should **follow lead safety practices** regardless of the type of playing surface. These practices can help prevent children from being exposed to the many sources of lead in the environment.

1. Wash children's hands frequently and always before they eat.
2. Do not eat food or use pacifiers that have been dropped on the floor or outside.
3. Remove shoes when entering the house or use door mats.
4. Have your house inspected for lead if it was built before 1978.
5. Use lead-safe work practices when doing work that disturbs lead-painted surfaces.

Lead Testing of Artificial Turf Fields

Facility managers who choose to have the turf at a field tested for lead should contact their local or state department of health and/or environment about appropriate sample collection and analytic methods. CDC and ATSDR recommend using appropriate U.S. Environmental Protection Agency, National Institute for Occupational Safety and Health, or American Society for Testing and Materials methods.

Additional Information

For additional information about testing, dust suppression measures, and other topics related to NJDHSS's work to address lead in artificial turf visit NJDHSS's artificial turf website at http://www.state.nj.us/health/artificialturf/index.shtml.

For a list of state health departments, visit the Association of State and Territorial Health Officers (ASTHO) site at http://www.astho.org/index.php?template=regional_links.php. ASTHO also provides a list of state environmental health directors at: http://www.astho.org/index.php?template=enhancing_environmental_health_s.html.

The U.S. Consumer Product Safety Commission regulates consumer products, including artificial turf. Additional information about CPSC and artificial turf can be found at http://www.cpsc.gov.

##This Message was distributed to State and Local Health Officers, Public Information Officers, Epidemiologists, State Laboratory Directors, PHEP/BT Coordinators and HAN Coordinators, as

well as Public Health Associations and Clinician organizations##

Categories of Health Alert Messages:	
Health Alert	Conveys the highest level of importance; warrants immediate action or attention.
Health Advisory	Provides important information for a specific incident or situation; may not require immediate action.
Health Update	Provides updated information regarding an incident or situation; unlikely to require immediate action.

You have received this message based upon the information contained within our emergency notification database. If you have a different or additional e-mail or fax address that you would like us to use, please contact the Health Alert Network program at your State or local health department.

Attachment 2.

Temperature of In-filled Synthetic Turf Athletic Fields

- Adamson, C, Feature Research: Synthetic Turf Playing Fields Present Unique Dangers; University of Missouri, Columbia, College of Agriculture, Food, and Natural Resources, http://cafnr.missouri.edu/research/turfgrass.php
- McNitt S., Petrunak D., Evaluation of Playing Surface Characteristics of Various In-filled Systems; Penn State Department of Crop and Soil Sciences; http://cropsoil.psu.edu/mcnitt/infill.cfm
- Williams F.C., Pulley G.E.; Synthetic Surface Heat Studies; Brigham Young University; http://cahe.nmsu.edu/programs/turf/documents/brigham-young-study.pdf

Attachment 3.

Infection Risk

- Archibald L, Shapiro J, Pass A. 2008. Methicillin-Resistant *Staphylococcus aureus* Infection in a College Football Team: Risk Factors Outside the Locker Room and Playing Field. Infect Contr Hosp Epid. 29:450-453.
- Begier E, Frenette K, Barrett N, et al. 2004. A High-Morbidity Outbreak of Methicillin-Resistant *Staphylococcus aureus* among Players on a College Football Team, Facilitated by Cosmetic Body Shaving and Turf Burns. Clin Infect Dis. 39:1446-53.
- Kazakova S, Hageman J, Matava M, et al. 2005. A Clone of Methicillin-Resistant *Staphylococcus aureus* among Professional Football Players. The New Engl J of Med. 352:468-75.
- McNitt S., Petrunak D.; Evaluation of Playing Surface Characteristics of Various In-Filled Systems; Penn State Department of Crop and Soil Sciences; http://cropsoil.psu.edu/mcnitt/infill.cfm
- New York State Department of Health, Health Advisory: Prevention Of Methicillin-Resistant *Staphylococcus Aureus* (MRSA) Infections In The School Setting, October 25, 2007.
- Nguyen D, Mascola L, Bancroft E. 2005. Recurring Methicillin-resistant *Staphylococcus aureus* Infections in a Football Team. Emerg Infect Dis. 11: 526-532.
- Romano R, Doanh L, Holtom P. 2006. Outbreak of Community-Acquired Methicillin-Resistant *Staphylococcus aureus* Skin Infections Among a Collegiate Football Team. J Athlet Train. 41:141-145.
- Stacey A, Endersby K, Chan P, Marples R. 1998. An outbreak of methicillin resistant *Staphylococcus aureus* infection in a rugby football team. Br J Sports Med. 32:153-154.

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LATIN

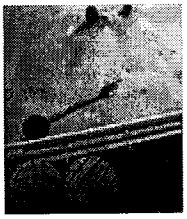
ATHLETICS

Athletics

Looking for the sports calendar? Click here.

Latin parents and students, please visit the Sports section of the Intranet for additional sports information.

For the latest game information and last minute changes, please call the Athletics Hotline at (312) 582-6599.



"Athletics at Latin emphasize physical fitness through exercise and conditioning; good sportsmanship in both winning and losing situations; teamwork, respect, and fair play; and skill improvement through drill and practice."

— The athletics handbook

Athletic programs play an important role in the total educational experience offered at The Latin School. They are one more way in which Latin helps each student realize the full range of his or her talents and abilities.

Latin's commitment to excellence in athletics reaches back to the earliest days of the School, when it held the Prep League title in football from 1903-05. Today, approximately 75 percent of students in the Middle and Upper Schools play on at least one interscholastic athletic team each year, and about half play on a team during any given season.

Challenging Competition

The School is a member of the Independent School League (ISL) of the greater Chicago area. The Independent School League, formed in 1966, comprises Latin, Woodlands Academy, Lake Forest Academy, Willows Academy, Elgin Academy, Francis W. Parker School, University High School, North Shore Country Day School, and Morgan Park Academy. While the majority of our interscholastic contests are with ISL schools, most Latin teams play area parochial and public schools as well.

Latin is a member of the Illinois High School Association (IHSA), which sets interscholastic competition guidelines for member schools. Varsity teams compete in state tournaments.

Latin's interscholastic athletics program strives to develop confident, enthusiastic, and disciplined athletes who use their full physical potential. An emphasis is placed on teamwork and sportsmanship.

Latin athletes are expected to make serious commitments to their sports. High school teams practice and compete during school breaks.

It is hoped that the cooperation demanded by team sports and the personal character formed through competitive play will benefit a student's academic work as well.

Latin athletes also participate in sports that are not yet recognized by the IHSA. For instance, Latin skaters were part of a girls' ice hockey team with athletes from Loyola Academy and North Shore Country Day School that captured the state championship in 2001. Our boys hockey team came in second in the state tournament in the Varsity combined division in 2006. And field hockey, though widely played by girls in independent schools and larger public schools, is not an IHSA sport. Since 2000, individual athletes have captured two state titles in swimming and a national championship in judo.

In recent years Latin students have gone on to play college soccer, water polo, volleyball, field hockey, basketball, and tennis, and to run college track and to swim. Latin's varsity and junior varsity coaches promote our athletes through the local media and the prep/college

network, and respond to colleges that request information about outstanding athletes.

Facilities
The Middle and Upper School building has two gymnasia, the Reed Gym and the Field Gym, which house basketball and volleyball courts. It also has an indoor pool and a new fully equipped Fitness Center for physical conditioning and weight training. A certified athletic trainer works with athletes who have minor injuries and suggests preventative and therapeutic measures.

Outdoor practices and most home contests are held in Lincoln Park, adjacent to the School. Tennis practices and home matches are held at the Waveland Avenue tennis courts along Lake Michigan.

At A Glance

The School: Founded in 1888, The Latin School of Chicago is an independent, coeducational day school located on the Near North Side of Chicago.

The Students: A diverse community of 1,101 students in junior kindergarten through twelfth grade from Chicago and the surrounding suburbs.

The Teachers: Caring, experienced professionals, 76 percent of whom have earned master's degrees or higher. The student/faculty ratio is 8:1.

Academics

- Latin offers a rigorous college preparatory curriculum that encourages independence, creativity, and curiosity.
- Minimum of 24 credits required to graduate, following distribution requirements for English (4), languages (3), history and social studies (3), mathematics (3 or 3.5), science (3), physical education (3), and fine arts (2).
- Nineteen Advanced Placement and 16 honors courses are offered in the Upper School.
- Students may choose from a variety of electives or independent study, including: Bible 101: The Bible in Art and Literature; Literature of the 21st Century; Number Theory; Planetary Astronomy; Human Anatomy; South African History; Nazi Mind; Digital Video Production]; and The Science of Music. For a full course catalogue visit the Academics section.
- In May 2006, 151 students took 331 AP exams in 21 subjects, 78 percent achieved scores of 3, 4, or 5.
- Academic Resources:
    - More than 600 computers operating on a fiber-optic gigabit backbone with internet access.
    - Lower School: Kindergarten classrooms; science, computer, and math labs, laptop cart with twenty-five computers; library with more than 12,000 volumes
    - Middle and Upper School buildings: Four computer labs; Middle School: writing lab with 20 computers and a laptop cart with twenty-five computers, six science labs; fully on-line library complex with quiet study areas, faculty study area, built-in audio-visual presentation equipment, and approximately 22,000 volumes. Fifty-two interactive white boards (Smart Boards) in classrooms in all three buildings
    - All regular classrooms are equipped with a data projector, computer, speakers, amp, DVD/VDR player

The 2006-07 School Year:

- Six students were named National Merit finalists.
- Twelve students were Commended Scholars
- Three students qualified for the National Hispanic Recognition Program.
- One student was a National Achievement finalist.
- SAT scores (middle 50%): 610-720 critical reasoning, 580-720 math, and 610-710 writing.

Athletics

- Interscholastic sports: 23 (field hockey, baseball, softball; boys and girls soccer, basketball, volleyball, tennis, golf, swimming, water polo, cross country, ice hockey, track & field).
- Interscholastic teams: 60+
- Conference championships in the last 10 years: 50+
- Seventy-five percent of Middle and Upper School students play on at least one athletic team.
- Lower School students may participate in volleyball, basketball, and soccer instructional leagues, as well as an interscholastic cross country team.
- Athletic Resources
    - Lower School: rooftop playground, gymnasium, multi-purpose room, and climbing wall.
    - Middle/Upper School: two gymnasia, indoor swimming pool, weight-training room, fitness center.
    - Lincoln Park athletic fields.

Arts

- Students in all divisions engage in visual and performing arts.
- Lower School art show is held each May. Several full-length performing art productions in the Middle and Upper schools are staged each year.
- Upper School students may participate in the Wind Ensemble, Jazz Band, Dance Company, Chorus, Chamber Choir, Women's Chorale, the Latones, The Acting Company, Improv Company, and several other acting ensembles.
- Arts Resources:
    - A 500-seat theatre and performing arts center with dance studio
    - Music practice rooms, band and chorus rooms
    - Visual Arts wing with three art studios and professional dark room
    - Gallery space
    - Art room with kiln

Beyond the Classroom

- More than 40 clubs and activities including the state championship Scholastic Bowl team, the award-winning yearbook, the *Forum* student newspaper, women's chorale, community service club, and student government.
- The Extended Day and After School Resources programs offer before and after school activities for Lower School students.

Latin in the Community

- Students at all grade levels participate in service projects.
- Every tenth grader performs at least 40 hours of community service.
- The school hosts High Jump, a tuition-free academic enrichment program for talented and motivated middle school students with limited family income.
- The school's adult education program, Live & Learn, provides classes for more than 6,000 Chicago-area adults in approximately 700 courses annually. Profits go to student scholarships and faculty development.

College Admission

- Typically 100 percent of each graduating class enrolls in a four-year college or university.
- Top college choices (3 or more students attending) for the Class of 2007: Attending Brown University, Dartmouth College, DePaul University, Emory University, Johns Hopkins University, Ohio Wesleyan University, University of Michigan, University of Southern California, and Yale University. Click here for the complete college admissions list (PDF).
- Profile for College Admission 2007-2008 (PDF)

Notable Alumni

- U.S. Supreme Court Justice John Marshall Harlan '16;
- philanthropist Brooks McCormick '36;

- former first lady Nancy Davis Reagan '39;
- sculptor Claes Oldenburg '46;
- businessman William Wirtz '47;
- Senator Adlai E. Stevenson III '48;
- industrialist William Wrigley '50;
- musician Roger McGuinn '60, founding member of The Byrds;
- U.S. Circuit Court Judge Douglas Ginsburg '63;
- actor and producer Bob Balaban '63;
- television producer and writer Carol Mendelsohn '69;
- Illinois Attorney General Lisa Madigan '84;
- Soap opera actor Lauralee Bell '87 and soap opera writer and producer Bradley Bell '82;
- professional tennis player Laura Granville '99; and professional soccer player Johanes Maliza '99.

Financial Data

- Tuition for the 2007-08 academic year: JK: $17,425; SK-grade 5: $19,535; grades 6-12: $23,285
- Financial aid: Typically, The Latin School offers more than $3.4 million in scholarships each year.

City of Chicago
Richard M. Daley, Mayor

Department of Environment

Suzanne Malec-McKenna
Commissioner

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http://www.cityofchicago.org

August 21, 2008

Heather Gleason
Assistant Commissioner
Department of Planning and Development
121 North LaSalle Street
Chicago, Illinois 60602

Subject: Lakefront Protection Ordinance Application Number 553
Chicago Park District Athletic Field
1840 N. Cannon Drive (South Lincoln Park)

Dear Assistant Commissioner Gleason,

The City of Chicago Department of Environment (DOE) has received the above referenced application submitted by the Chicago Park District for the Athletic Field located at 1840 N. Cannon Drive (South Lincoln Park).

DOE has reviewed the application in relation to the Fourteen Basic Policies of the Lakefront Plan of Chicago and the Thirteen Purposes of the Lake Michigan and Chicago Lakefront Protection Ordinance and has no objections to the proposed plan.

In addition, DOE has performed an environmental property screen of the area. The property screen involves a review of local, state, and federal environmental databases. No environmental records that could potentially cause a negative impact were found in the database search for this property and surrounding properties within 250 feet.

Should you have any questions regarding this matter, please contact Zachery Clayton at (312) 744-3161.

Sincerely,

Kimberly Worthington /cjr

Kimberly Worthington, P.E.
Deputy Commissioner

cc: Files

KW/UMBR/vmj