

MEMORANDUM

TO: Artificial Turf Field Interested Parties

FROM: Steven LaRosa, PFAS Technical Leader
Marie Rudiman, Senior Risk Assessor/Toxicologist

DATE: 10/14/19

SUBJECT: Potential PFAS presence in Artificial Turf

Recent news articles ([Boston Globe](#) dated 10/09/19 and [The Intercept](#) dated 10/08/19) have discussed the potential presence of poly and perfluorinated alkyl substances (PFAS) in artificial turf sports fields. PFAS are a family of compounds used in numerous commercial products to provide durable waterproof coatings. The scientific community is rapidly evolving its understanding of PFAS in the environment. PFAS are considered to be contaminants of emerging concern (CECs). CECs are those chemicals that present potentially unacceptable human health effects or environmental risks, and either: (1) do not have regulatory cleanup standards, or (2) regulatory standards are evolving due to new science, detection capabilities or pathways, or both. Due to their presence in many products under brand names such as Teflon and Gortex, PFAS are ubiquitous in the environment. PFAS has been detected in human blood, sediments, surface and groundwater, and wildlife. Although the scientific research into PFAS is evolving, there is evidence there may be adverse health effects associated with long-term exposure to some PFAS compounds. The primary focus of USEPA and other regulatory agencies for exposure to PFAS is through consumption of PFAS in contaminated drinking water. Based on the limited research studies and what is known about the chemical composition of PFAS, dermal (skin) contact with PFAS containing materials is expected to pose minimal health risk. Similarly, based on available research and the chemical composition of PFAS, PFAS compounds do not appear to be volatile and are expected to pose minimal health risk through inhalation.

While the recently reported sampling and analysis of artificial turf appears to indicate that PFAS are present in some of the components of the turf system, Weston & Sampson has reviewed the reported sampling of the turf field materials for PFAS and found several potential issues with the reporting as highlighted below.

- Currently, there is no certified method for analyzing PFAS concentrations in materials other than an EPA method for analyzing PFAS in drinking water. Since the samples were carpet and not

drinking water, the methods used for analysis were almost certainly not certified and therefore, the results are questionable.

- The articles indicate that two samples of synthetic turf were analyzed and PFOS (one of the PFAS compounds) was detected in both samples. Two samples represent an extremely small sampling size. No scientific conclusions can be made with this small sampling size.
- The article noted that an additional eight samples were analyzed for total fluorine and further noted that total fluorine indicates that PFAS is present. What the article did not mention was that testing total fluorine is an extremely non-specific method that can indicate the presence of PFAS or many other non-PFAS compounds. For example, many household products contain fluorine such as toothpaste, mouthwash, and various household cleaners. The presence of fluorine does not necessarily indicate PFAS compounds are present.
- There was no indication of how the samples were collected or how the samples were preserved so that there is no cross contamination. In the field, cross contamination of PFAS is extremely common. For instance, there has been cross contamination reported in drinking water when field techs have been wearing rain-resistant clothing while collecting the sample.
- The article compared the concentration that was detected in one sample of synthetic turf to the drinking water health advisory. This drinking water health advisory is set very low to protect potential human exposure to PFAS in drinking water and it is not an applicable measure of potential exposures to a chemical while playing on synthetic turf.

Despite the apparent scientific shortcomings identified in the referenced news articles, Weston & Sampson takes this matter seriously. We have contacted synthetic turf suppliers to determine if PFAS are utilized in the manufacture of their products and we have reached out to the Massachusetts DEP for potential guidance. We are working with vendors and manufacturers to ensure that products do not contain PFAS and meet California Prop 65 and European REACH standards of safety.

Weston & Sampson will provide updates on this subject as additional information becomes available.