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May 1, 2019

Editorial Department of Building and Environment

Dear Sir or Madam:

I am pleased to submit this manuscript entitled "Temporal Variations In Vapor Intrusion-Induced Indoor Air Contaminant Concentrations" for review and possible publication in Building and Environment. This is original work, and has not been previously published by any other journal or conference proceedings.

Using numerical models and published field data from three vapor intrusion (VI) sites, we explore the causes of the temporal variation in indoor air contaminant concentrations in VI impacted houses, a poorly understood phenomena. We especially investigate the role of preferential contaminant pathways have in VI, and how air exchange rates contribute to variability in indoor air contaminant concentration.

Some of our conclusions that we believe contribute to the state-of-the-art:

- Preferential pathways may lead to the false conclusion that there are indoor sources present at a VI site.
- The conditions necessary for a preferential pathway to significantly impact a VI site.
- The contribution of indoor/outdoor pressure difference and air exchange rate has on temporal variability in indoor contaminant concentrations.
- How much variability in indoor contaminant concentration one may expect over various time periods, helping inform effective sampling strategies.

We expect the topics explored and conclusions reached in our work will be of great interest to your readership.

Thank you for considering this manuscript for publication.

Sincerely,

Jonathan Ström