



Title: Identifying Baseline Gas Composition and Trends in Massachusetts Interstate Pipelines

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Abstract:

Natural gas has been touted as a clean, safe, and green source of energy. However, our gas is now produced predominantly by fracking. The fracking process may introduce harmful chemicals into the natural gas that is piped into homes around the United States. A research collaboration at Harvard University is currently sampling the gas supply in our homes and analyzing the volatile organic compound (VOC) composition to learn whether the chemical composition of gas today contains any harmful chemical components introduced by the fracking process. I was tasked with compiling a dataset from available interstate pipeline gas chromatography databases and evaluating the baseline composition of natural gas and seasonal and locational trends.

Hourly reported gas composition data from the Algonquin, Maritimes & Northeast, and Tennessee pipelines at multiple checkpoints on each pipeline were downloaded and compiled. This extensive dataset spanned a year to ensure it would assess seasonal variability. Data between pipelines exhibited a generally low but present correlation, with certain seasonal trends and little locational correlation. These results allow researchers to accurately assess gas samples.