

Odor Masking Events: Initial Aspects

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The safe transport and delivery of natural gas is dependent its successful odorization. Gas companies add tertiary butyl mercaptan or related compounds to give natural gas a “rotten-egg” odor. This is a mature technology, with many decades of proven operation. Occasionally, however, there are incidents of lower than expected odor, even in volumes of properly odorized natural gas. This may be caused by odor fade, the removal of odorant compounds from the natural gas, or odor masking, where odorant molecules are present in desired concentrations but are not detectable by olfaction. Our current work focuses on odor masking and consist of three integrated parts: detailed analysis of the composition of natural gas samples with low odor (geared toward providing an information base of possible odor masking compounds present in natural gas), a study of protein/small molecule interactions that seeks to describe the pathways responsible for odor masking, and the development of standard tests for possible odor masking compounds appropriate for commercial settings. In this poster we discuss the initial aspects of this long term project. We will focus on a comprehensive study of gas volumes that exhibit masking events. Results from chromatography and spectroscopy (primarily mass spectrometry, nuclear magnetic resonance spectroscopy) will be described, and conclusions discussed.