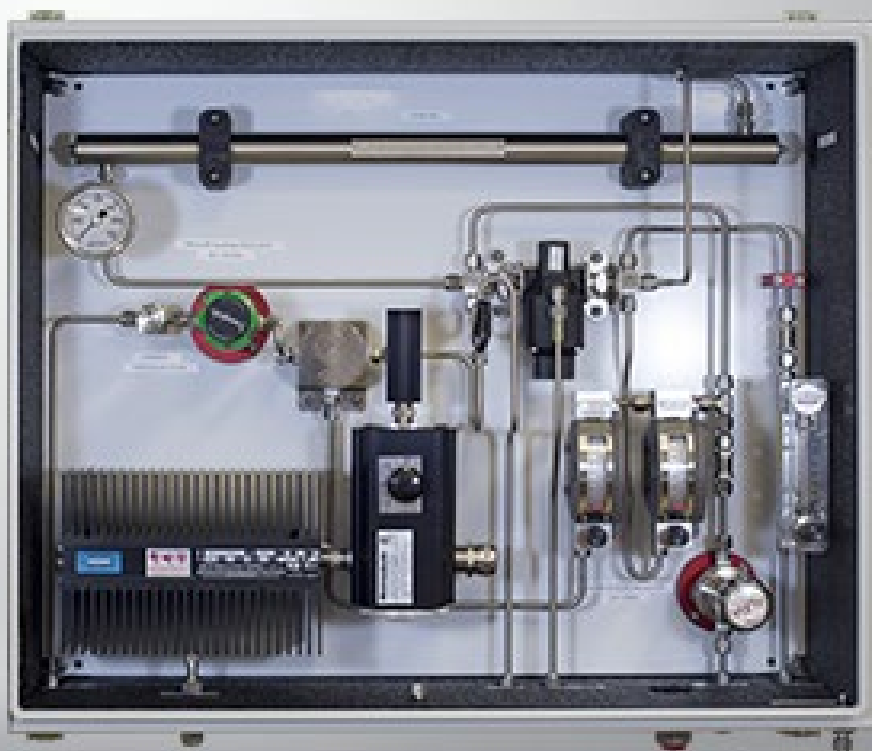


THT in Natural Gas

Online monitoring by the OMA-300



Application Brief: Measuring THT in Natural Gas

Applied Analytics Newsletter

Natural gas for direct consumption is odorized for safety reasons. In the odorizing process, a substance with extremely high odor is added to natural gas in a controlled method. The odorized natural gas is then transmitted via pipelines into crowded urban settings and eventually into homes, schools, and workplaces.

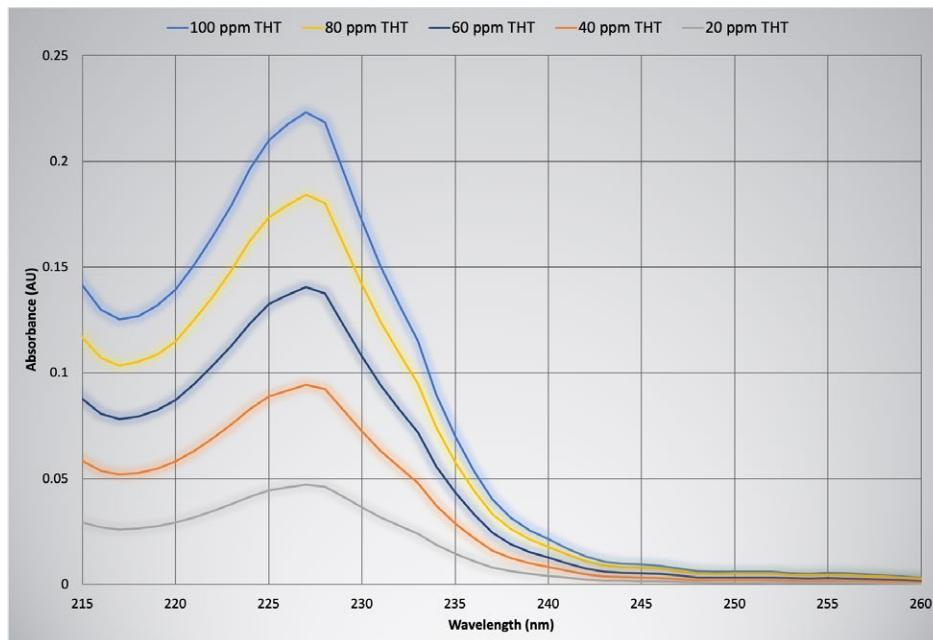
In many cases, the smell of the gas is the only mechanism for leak detection and prevention of catastrophic explosions. Mercaptans are often used as odorants due to their low odor threshold. In Europe, tetrahydrothiophene (THT) is commonly used. Since the pipeline material absorbs some of the odorant out of the natural gas stream, the THT level is continuously monitored to ensure the gas is adequately odorized throughout the pipeline.

Case Study

At one border crossing in Western Europe, where custody of a natural gas pipeline is transferred, the operators depend on Applied Analytics technology to continuously validate odorant level at several points. An OMA-300 Process Analyzer is installed at each monitoring point with a dedicated sampling system for handling the high pressure natural gas.

Application:	THT in Natural gas
Location:	Western Europe
Equipment:	OMA-300 Process Analyzer
Span Check:	5 PPM THT in Methane

Figure 1: UV absorbance spectra of THT

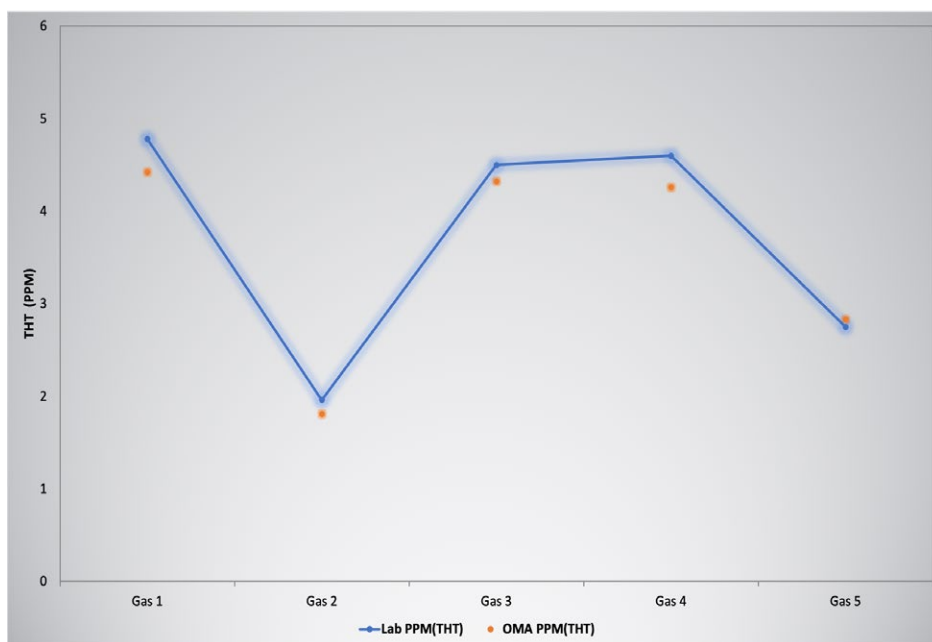


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Each of the measurement checkpoints at this site receives natural gas flowing from a different source, such that each analyzer is being fed a stream with unique gas background matrix.

Figure 2: shows the actual readings of THT in these natural gas streams.



Conclusion

At this site, the OMA-300 has simplified pipeline operation by providing low maintenance, automated odorant monitoring, giving the operators at-a-glance odorant levels at multiple checkpoints. Applied Analytics technology is trusted with the critical task of ensuring gas safety downstream into populated areas.

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