TerraAir
Air Monitoring Systems

Leak Event

Abstract: This white paper showcases the results of the accidental detection of a nearby natural gas leak from a new subdivision under construction.

Introduction: This particular monitor was deployed for R&D testing when the methane sensor picked up a random natural gas leak. The TerraAir solar-powered air monitor provides continuous, outdoor air monitoring using multiple sensors. The acquired data is sent to the cloud via LTE communication where it is databased and accessed by a customized dashboard. This test monitor happened to be equipped with a methane sensor which detected the leak.

Mon, Feb 5th 2024

High: 64.94°f @3:51 PM Low: 51.08°f @11:51 PM Approx. Precipitation / I

Time (CST)	Temp. (°f)	Humidity (%)	Dew Point (°f)	Barometer (inHG)	Wind Speed (mph)	Wind Direction	Wind Gust (mph)
11:51 PM	51.08	71.19	42.08	30.16	-	-	-
10:51 PM	53.96	66.3	42.98	30.17	4	nnw	-
9:51 PM	55.94	61.69	42.98	30.16	7	nnw	-
8:51 PM	55.04	66.43	44.06	30.14	4	nw	-
7:51 PM	57.02	59.33	42.98	30.13	3	nnw	-
6:51 PM	57.92	57.45	42.98	30.12	-	-	-
5:51 PM	62.96	48.04	42.98	30.09	5	nnw	-
4:51 PM	64.04	46.25	42.98	30.09	10	n	17

Results and Analysis: The incident spanned three days, with the primary leak event persisting for about 14 hours. The methane sensor registered concentrations exceeding 500 parts per million (ppm) during this period. Despite the air monitor not consistently aligning with the prevailing wind direction according to local wind data, and positioned roughly 500 feet away from the construction site, it successfully detected the leak.

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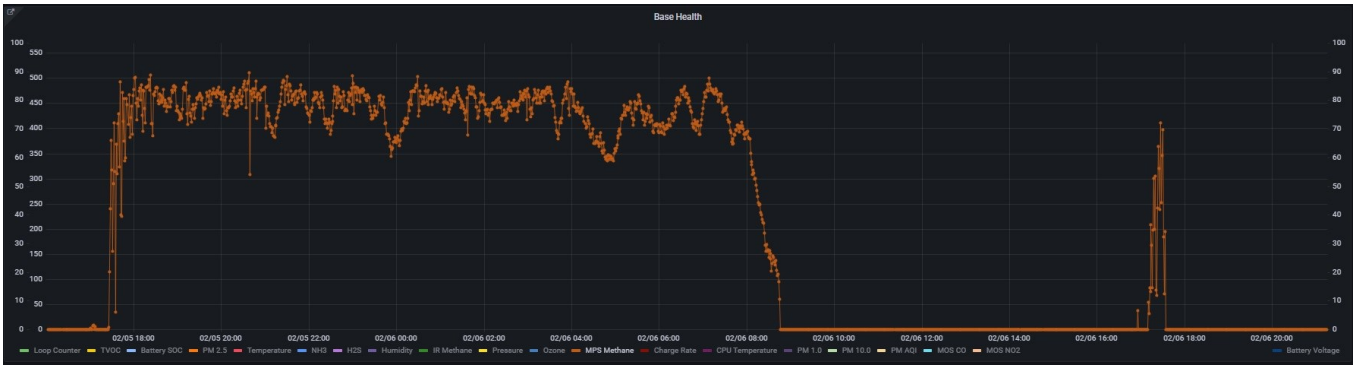
Discussion: The accidental detection of a natural gas leak during the testing of an air monitor equipped with a methane sensor near a construction site underscores the importance of proactive monitoring in potentially hazardous environments. The timely detection of the gas leak, even during a routine test, demonstrates the effectiveness of continuous monitoring systems in identifying potential safety hazards. This early detection can help prevent more serious consequences, such as explosions or environmental damage.



Conclusion: The proximity of the air monitor to the construction site raises concerns about the safety practices and procedures in place at such sites. Construction activities can disturb underground infrastructure, including gas pipelines, leading to leaks. Implementing strict safety protocols and regular monitoring can help mitigate these risks. The fact that the air monitor detected the leak even when not directly in the path of the wind indicates its sensitivity and reliability. This underscores the importance of using advanced monitoring systems in industrial and construction settings to ensure early detection of potential hazards.. The accidental detection of a natural gas leak during air monitor testing serves as a reminder of the importance of proactive monitoring and safety measures in preventing and mitigating environmental and safety hazards.

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