

UAB VAATC Enhancing Landfill Air Quality with Oizom's Monitoring Solutions



INTRODUCTION: UAB "VAATC's Commitment to Sustainable Waste Management

UAB "VAATC" (Vilniaus apskrities atliekų tvarkymo centras) is a waste management company based in Vilnius, Lithuania. It was established in 2003 to create and manage the Vilnius regional waste management system. The company is responsible for collecting, transporting, processing, and disposing of waste in the Vilnius region. It operates waste collection sites, transfer stations, and landfill networks. VAATC also works to promote waste reduction and recycling. VAATC is owned by the municipalities of the Vilnius region, and it works closely with them to provide waste management services to residents and businesses. The company is committed to protecting the environment and human health and strives to provide efficient and sustainable waste management solutions.



THE CHALLENGE: Addressing Air Quality and Odour Issues at Kazokiškių Landfill

One of the biggest challenges in waste management is air pollution and odour control, especially in landfill areas where decomposing waste emits harmful gases. Due to these, VAATC faced several air quality challenges:

- 1. Odour Affecting Nearby Communities:** The landfill emitted high levels of odourous

gases, and nearby residents frequently reported unpleasant odours, leading to public dissatisfaction and environmental concerns.

- 2. Unpredictable Air Pollution Patterns:** Air pollution levels vary based on weather conditions, waste composition, and landfill activities. The lack of real-time odour monitoring made it difficult to promptly identify and respond to odour events.
- 3. Need for comprehensive monitoring:** To analyze air quality trends and implement effective mitigation strategies, they needed to monitor pollutants like PM, H₂S, and CO, along with meteorological factors such as THP, Dewpoint, Wind Speed, and Rainfall.
- 4. The Need for Wind Data Correlation:** Wind plays a major role in spreading landfill gases to surrounding areas. Without wind data, predicting how pollutants were dispersed and which areas were most affected was impossible.
- 5. Regulatory Compliance & Data Transparency:** Environmental agencies require accurate, continuous air quality data to ensure compliance with air pollution regulations. The lack of automated monitoring made it difficult for UAB "VAATC" to track pollution trends and take corrective actions in real-time.

To overcome these challenges, they needed a highly accurate, real-time air quality and odour monitoring solution that could provide actionable insights for effective landfill management.

THE SOLUTION: Oizom's Smart Landfill Monitoring System

To address these challenges, DICTO provided a tailored monitoring solution integrating Oizom's Polludrone and Odosense devices at key locations within the landfill. These smart monitoring solutions provided real-time data on air pollution and odour levels, allowing authorities to take proactive measures to reduce environmental impact.

- 1. Multi-Parameter Monitoring:** Oizom's Polludrone and Odosense measure a range of environmental parameters essential for air quality management, including particulate matter (PM), hydrogen sulfide (H₂S), carbon monoxide (CO), Ammonia (NH₃) along with temperature-humidity-pressure (THP), dew point, wind speed and direction, and rainfall.
- 2. Real-Time Weather Monitoring:** The system continuously measured wind speed, wind direction, temperature, humidity, and rainfall, helping UAB "VAATC" analyze weather conditions that impact air pollution and odour dispersion.
- 3. Regulatory Compliance:** The real-time data enabled VAATC to meet environmental regulations by ensuring pollutant levels remained within permissible limits.
- 4. Regular Alerts and Notifications:** Automated alerts



INSTALLATION DETAILS

**1 UNIT of POLLUDRONE
and
2 UNITS of ODOSENSE**

notify landfill operators of sudden pollution spikes, enabling quick responses and mitigation measures.

- 5. Wind and Pollution Rose for Source Identification:** Landfill authorities could pinpoint pollution sources and track odour dispersion patterns by analyzing wind and pollution rose charts, leading to more effective odour management strategies.

With real-time odour and weather monitoring, they accurately identify emission sources and track pollutant dispersion patterns.

THE TRANSFORMATION: Enhanced Air Quality Management

Installing Oizom devices proactively simplified corrective actions and helped minimize environmental impact, ensure regulatory compliance, and reduce odour-related complaints from nearby communities. VAATC also experiences several benefits, including:

- 1. Emission Dispersion Direction Analysis:** By integrating wind speed and direction data with gases and PM, the system helps track how pollutants and odours spread, allowing for strategic interventions to minimize their impact on surrounding areas.
- 2. Efficient Pollution Management:** Continuous air quality monitoring enables landfill operators to identify pollution sources, assess concentration levels, and implement targeted measures to control emissions effectively.
- 3. Better Community Relations:** With effective monitoring and action plans, the air quality around the landfill improved, leading to a noticeable reduction in odour complaints from nearby residents, which fostered transparency and trust.
- 4. Effective Complaint Management:** With Envizom's complaint module, authorities can more efficiently check nearby community complaints, identify root causes, and take corrective actions.
- 5. Environmental Protection and Compliance:** By ensuring adherence to air quality standards, the system helps them maintain regulatory compliance while contributing to a cleaner, healthier environment.

Continuously analyzing air quality and meteorological data enables landfill operators to detect pollution spikes, assess their impact, and implement timely interventions.

BROADER IMPACT: Setting a New Standard for Landfill Air Quality Management

The successful deployment of Oizom's real-time air quality and odour monitoring system has revolutionized VAATC's approach to landfill management. By using advanced monitoring technology, meteorological data, and wind analysis, the organization can now monitor landfill emissions with high precision. With real-time data insights, they can predict odour dispersion patterns, identify pollution sources, and implement timely corrective measures before issues escalate. This proactive approach not only enhances environmental protection and regulatory compliance but also helps reduce community complaints and foster better public relations.

CONCLUSION: Leading Sustainable Waste Management with Accurate Data

By deploying Oizom's Polludrone and Odosense devices, UAB "VAATC" has significantly improved air quality monitoring at Kazokiškių landfill. The ability to collect and analyze real-time environmental data has empowered the organization to address odour issues, regulate emissions, and enhance community well-being. This collaboration with DICTO and Oizom sets a new benchmark for sustainable waste management, demonstrating how advanced air quality technology can transform landfill operations into environmentally responsible practices.

Oizom is a company specializing in environmental monitoring solutions. They offer products to monitor air quality, weather conditions, and other environmental factors. Utilizing advanced sensor technology and data analytics, Oizom aims to provide actionable insights for construction, industrial compliance, and community awareness. Their solutions can be applied in various sectors including government, industries, and community initiatives.