SCENTROID

SL50
SCENTINAL

Reference List

SL50 SCENTINAL APPLICATION OVERVIEW

Compact Air Quality & Odour Monitoring Station

Applications:
Wastewater treatment, landfills, greenhouse gas monitoring, oil & gas, petrochemical, well sites, construction sites, smart cities, urban areas, municipalities, research, agricultural

SL50 Scentinal

   The Scentinal monitoring station has been designed to collect data from a variety of sensors and present the sensor data in an easy to understand graphical interface. With an operating temperature range of -50°C to 80°C, the Scentinal has been built to withstand a wide array of scenarios! The flexible intelligent station allows live monitoring of plant emissions on Scentroid's cloud servers. Odour emission is reported in OU/m3, calculated using Scentroid's deep learning algorithm.

   Scentinal can be customized to fit a wide range of applications. Users can select from a list of over 50 sensors to monitor gas pollutants, dust, meteorological conditions, noise, and even radiation. Scentinal can monitor emissions from a stack, sample from ambient air, or measure indoor air quality. Communications modules such as Modbus and BACnet allow Scentinal to be integrated into industrial plants and central monitoring stations.

Detected gases
H_2S, SO_2, CO_2, CO, Cl, C_2HO_4, H_2, HCl, HCN, NH_3, O_3, NO_2, PH_3, O_2, CH_4, NO, VOCs and more

Communication
3G/4G, WiFi, Modbus, LoRa

Daily Maintenance
Automatic cleaning and decontamination of all lines every 24 hrs.

Plug and Play installation
Sensors record their GPS position. Once powered, the central computer will know the exact location of the unit, even when moved

Featured Sensors
PM2.5 and 10, odour, dust, noise and radiation

Temperature range
-50°C to +50°C with HVAC
-50°C to +80°C with CHVAC

Reporting Standards
Traceable back to international standards e.g. USEPA (40 CFR Part 53) and EU (2008/50/EC)

Cloud Access
Unit can be accessed on location or remotely using encrypted cloud based hosting

No Power? No Problem!
The Scentinal SL50 can run on solar generated energy

APPLICATION: WASTEWATER SEWER MANAGEMENT

Gas to be monitored:
H_2S, TRS, VOC (PID), NH_3, CH_4, SO_2

Challenge

Six ventilation facilities have been constructed along the main sections of the Potomac Interceptor (PI) for the long term abatement of odors generated by the sewer. The foul air is pulled from the interceptor with a fan and moves radially through the media bed, where odorous compounds are removed by the two stages of media installed in the vessels. The first layer of media is a pelletized, bituminous based high H2S capacity activated carbon. The second layer is currently a 6% potassium permanganate impregnated zeolite.

Periodically, the media becomes spent and requires replacement.

How Scentroid helped:

The Scentroid SL50 was equipped with high sensitivity (ppb) sensors for H2S, TRS, and VOC's to monitor media health in the OCU and reduce operating costs

Client: The District of Columbia Water and Sewer Authority

The district of Columbia Water and Sewer Authority provides drinking water, sewage collection and sewage treatment in Washington D.C. and other municipalities in Maryland and Virginia.

APPLICATION: OIL & GAS

Gas to be monitored:
VOCs, CH_4, H_2S, SO_2, CO_2

Challenge
The petrochemical industry must deal with a variety of environmental issues being addressed by federal, provincial and municipal regulators, including: control of odour, release of toxic chemicals, volatile organic compound (VOC) emissions, generation of greenhouse gases, emissions of contributors to acid rain (for example, NOx, SOx), ozone depleting substances, and contamination. Is there a quick and effective method of monitoring, ensuring continued compliance?

How Scentroid helped:
Through implementing these facilities with a network of SL50 units, they are able to continuously monitor specific pollutants through the use of an array of handpicked sensors catering specifically to their needs.

By providing our client with easy to use software, they are now able to map and forecast specific chemical compounds within the surrounding air. This allows them to paint a complete picture of the entire affected area in order to make informed decisions on actions to be taken and mitigation practices developed.

Client: Cydsa, Monterrey Mexico
CYDSA is a business group with presence in three segments: Chemical Products and Specialties, Electricity and Steam Cogeneration and Processing and Underground Storage of Hydrocarbons.

APPLICATION: MINING, CONSTRUCTION SITE

Gas to be monitored:
CO_2, H_2, H_2S, O_2, CH_4, N_2, NO_2, SO_2

Challenge

Blasting is an integral part of large-scale open cut mining that often occurs in close proximity to population centers and often results in the emission of particulate material and gases that are potentially hazardous to health.

How Scentroid helped:

Scentroid was contacted by KML for the supply of four Scentoid SL50 units for the monitoring of emissions from mining operations. The units were equipped with a state of the art laser scattered particulate sensor to assess emissions in ambient air of PM 2.5, PM10.

Prevalent mining operations, copper refineries, and the effects of transport lead SL50 configuration to mitigate impacts of emissions in plant operators. Sulfide dioxide and nitrogen dioxide sensors were added too, in order to track emissions due plant operations.

With the monitoring tool, plant administrators will be able to oversee the performance of the plant and the release of pollutants into the environment.

Clients: Katanga Mining, Rep. of Congo
Located in the Democratic Republic of Congo. The company produces copper and cobalt. World Bank is founding mining operations with around US$ 2.1 billion in capital committed and to minimize impacts of poverty in the region.

APPLICATION: URBAN POLLUTION

Client: Eden District, South Africa

The Eden district covers an area of 23,331km^2 with a flourishing population of over 600,000 residents.

Gas to be monitored:

O_3, NO_2, SO_2, PM2.5, PM10

Challenge

The Eden District features many Industrial plants around city. It's citizens had filed numerous complaints regarding health concerns due to poor air quality. The municipality had decided to monitor the area in order to measure ambient pollution and better manage it, in order to provide better quality of life.

How Scentroid helped:

The project involved the setup and commissioning of the air quality monitoring network for the monitoring of WHO reference pollutants such as NOx, SO2, Ozone, PM2.5 and PM10, Therefore, Scentroid SL50 were configured for the measurement of these pollutants for ambient air.

Air dispersion modeling was conducted to identify pollution hotspots and to place the monitoring stations in sensitive receptor areas. The municipality is using the SL50 supplied software "Scentinal Information Management System" (SIMS) for monitoring of reference pollutants to improve the municipality's air quality.

APPLICATION: WASTEWATER TREATMENT PLANT

Client: Metro Vancouver Sewage and Drainage District

provides core utility services (water, sewage, and drainage in 21 municipalities within the Metro Vancouver Area.

Gas to be monitored:

H_2S, TRS, VOC (PID), NH_3, CH_4, SO_2

Challenge

Metro Vancouver was looking for the implementation for a continuous monitoring system for two waste water treatment plants. The monitoring system should be capable to continuously sample ambient air form Lulu and Iona WWTP to measure odour concentrations.

How Scentroid helped:

A total of two SL50 monitoring stations were used per plant in conjunction with a gas chromatograph TRS Medor for the measurement of pollutants. An advance machine learning algorithm was used in conjunction with olfactometric measurements to feed the system and create correlation from pollutants released in the plant and odour units to measure odour concentration.

A dynamic modeling system was setup that include a user interface for plant monitoring and complaint management. The total odour management system (TOMS) allowed the plant operator to track plant performance and complaints generated and its resolution.

APPLICATION: UNIVERSITY & RESEARCH

Gas to be monitored:

To be selected from list of available sensors (+30 sensors)

Challenge

The University of New Orleans required some form of emissions monitoring equipment to collaborate with the city in order to establish mitigation solutions.

How Scentroid helped:

Scentroid was secured by the dean of the engineering department for the supply of two Scentroid SL50 monitoring stations. The SL50s were designated to cater to the needs the research group within the Department of Planning and Urban Studies. The SL50 monitoring stations were configured with sensors for measuring SO2, NO2, VOC's, PM2.5 and PM10 for monitoring reference pollutants. With these units, the University will be able to further collaborate with the City of New Orleans in developing programs and solutions for sustainability, with the long term goal of reducing emissions of pollutants.

Client: University of New Orleans

University of New Orleans is a comprehensive urban research institution

offering a variety of worldclass research based programs.

APPLICATION: GREENHOUSE

Client: Cannabis Grow-op Facilities

Gas to be monitored:
NH_3, H_2S, CO_2, CH_4, PM2.5, PM10

Challenge
Cannabis greenhouses are becoming more and more prevalent in the agricultural industry. However, odour concerns are now rising from affected communities; methods of terpene detection + mitigation are needed more than ever.

How Scentroid helped:
A key component of the Scentinal sensing system is it's ability to input the data into Scentroid's optional cloud based software TOMS, an addon to the core SIMS system. TOMS offers a complete, integrated suite for odour management. The system provides a perfect integration of real-time odour impact estimation with management of odour complaints from neighboring residents. The easy to use software utilizes Scentinal sensory data, in field-olfactometry and live weather data to produce real time odour plumes showing you exactly the location and level of odour emissions. Neighboring complaints are automatically logged and compared to odour emissions for fast and efficient validation.

APPLICATION: LANDFILL, COMPOSTING FACILITY

Gas to be monitored:
CO_2, H_2, H_2S, O_2, CH_4, N_2, NO_2, SO_2

Challenge
Due the nature of landfill operations and the large area involved with uneven emissions, monitoring pollutants coming out with traditional methods is unrealistic. The need for a monitoring network to track emissions and its impacts was necessary for EnviroServe operations.

How Scentroid helped:
Scentroid was secured for the supply of eight SL50 air quality monitoring stations for EnviroServe operations. Eight monitoring stations were installed to monitor landfill emissions of ammonia, methane, hydrogen sulfide and volatile organic compounds.

EnviroServe acted proactively in the solution of potential complaints by implementing good practices for tuck unloading and landfill processes including the monitoring of emissions from landfill liquors and its treatment.

Client: EnviroServe, South Africa
With over 37 years of experience, EnviroServe is South Africa's largest waste management company and waste solutions provider. EnviroServe offers cost effective solutions to complex hazardous and nonhazardous waste.

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APPLICATION: LIVESTOCK MONITORING

Client: Feedlot & compost facility, Alberta

Gas to be monitored:
NH_3, CH_4, VOCs, TRS, H_2S, MS3

Challenge
A feedlot and compost facility in rural Alberta had been receiving complaints from nearby residents within the surrounding community, located in the outskirts of a major city. These complaints were numerous and collected quickly over a short period of time, prompting the local Government to demand immediate action or face the potential closure of their facility.

How Scentroid helped:
Upon being contacted, Scentroid completed an immediate odour impact assessment employing the use of the scentroid SM100 and odotracker in order to provide olfactometric and analytic measurements throughout the site. Data points were collected within the interior of the site and along the fence line. This allowed Scentroid to model the data, which displayed the severity and extent that the odor air plume could extend. This resulted in a staggering 20km radius. It was at this point the client had decided that they wanted to monitor the facility continuously, resulting in the use of 2 SL50 units. Scentroid directed the facility where to install the units to ensure the most ideal location for further data mining.

As city council had sought the termination of the facility, Scentroid had served as expert witnesses to ensure that the odour situation would be contained and monitored, and is within reasonable limits. Our team also provided a wealth of knowledge regarding mitigation solutions to manage the odor in order to minimize complaints.

APPLICATION: METALLURGY

Client: Steelworks, Aluminum Mill

Gas to be monitored:
SO_2, CO_2, CH_2O, H_2S, HF, HCL, PM2.5-10

Challenge:
Epidemiological studies have shown that continued exposure to ambient air pollution in and around steelwork facilities has been linked to the increased risk of cardiovascular re-lated illnesses, or in extreme cases, premature mortality. Links to heart rate variability have been made with various pollutants, including ultrafine PM, concentrated PM, and ozone.

How Scentroid helped:
Scentroid employed a series of different methods to monitor ambient air to pinpoint problematic areas, however, a stationary monitoring system was required for the contin-uous monitoring and frequent comparison of day to day changes in the surrounding air. Scentroid installed multiple units surrounding the facility, allowing our client to better equip those in direct contact with harmful airborne pollutants, and develop methods of mitigation and odour control, protecting their community from the inherent dangers of poor air quality.

APPLICATION: MANUFACTURING PLANT

Client: Automotive, Mass Production

Gas to be monitored:
SO_2, CO_2, CH_2O, H_2S, HF, HCL, PM2.5-10

Challenge
Welding and various forms of industrial processes not only generate nuisance debris - they emit harmful pollutants that can pose serious health concerns. These pollutants may include oil mist, dust, manganese, lead, hexavalent chromium, and other dangerous chemicals. As a result, the government has chosen to regulate indoor air quality, ensuring a safe workplace environment. Failing to adhere to these regulations may result in fines upwards of $300,000.

How Scentroid helped:
Poisonous gases and fumes are a regular occurrence whenever chemical bonding processes or welding occurs. As one of the most common industrial practices, welding and robotic welding air quality monitoring remains as an important topic. Grinding and deburring (another standard industrial practice) generates harmful dust particles which require immediate control, as they could potentially pollute an entire workplace from a single source.

In the effort to ensure a safe workplace, Scentroid has employed the use of the SL50 Scentinal unit, allowing for real time data analysis and monitoring to be sent directly to the control station. The Scentroid team then assisted with the brainstorming of mitigation solutions and best practices in order to better the air quality within the facility.

SCENTROID CLIENTS

Australian Government

UNIVERSITY OF TORONTO

City of Los Angeles — LA SANITATION environment — CITY OF LOS ANGELES

DTU Technical University of Denmark

P&G Procter & Gamble

Health Canada

بلدية دبي DUBAI MUNICIPALITY

NASA

Duke UNIVERSITY

UNIVERSITY OF COPENHAGEN

University of Central Florida

THE UNIVERSITY of NEW ORLEANS

EDEN DISTRICT MUNICIPALITY

Honeywell

UBC THE UNIVERSITY OF BRITISH COLUMBIA

THE CITY OF COLUMBUS

Ontario

3M

Google

...Plus many more!