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CASE STUDY

Where: Los Angeles, California, USA
Product: 2 x Dust Sentry
Installed: 2018
Result: Compliance with SCAQMD Rule 1466 for air monitoring on a voluntary Brownfields Cleanup Program project under DTSC oversight

THE CUSTOMER

SCS ENGINEERS

SCS Engineers is an international environmental engineering firm, rated a top performer in environmental consulting services, and for seven years rated the number one solid waste engineering company in the United States by *Engineering News Record*. One of the many things SCS does is to help their clients reduce risks associated with converting environmentally impacted land into developable properties. In Southern California, this includes compliance with various environmental regulations, including South Coast Air Quality Management District (SCAQMD) Rule 1466 – *Control of Particulate Emissions from Soils with Toxic Air Contaminants.*

THE PROBLEM

SCS Engineer's client, one of the largest owner, operator and developer of industrial real estate in the United States, with a portfolio of millions of square feet of industrial warehouse space in dozens of markets, intended to redevelop a former industrial manufacturing site in the Los Angeles area into a world-class industrial park. The site had been used for manufacturing for approximately 70 years. Previous operations included plating, degreasing, heat treating, oil quenching, metal machining, painting, and metal treating. Several sumps and pits were identified as being contaminated with hazardous chemicals used in association with these activities, including heavy metals, volatile organic compounds (VOC) and total petroleum hydrocarbons (TPH). The California Department of Toxic Substances Control (DTSC) provided regulatory oversight under the Brownfields Cleanup Program.

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— Ray Huff, SCS Vice President

Building demolition complete, SCS Engineers performed soil remediation and associated dust monitoring services for the new industrial development in Los Angeles

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The approved remediation program includes excavating soils impacted with VOCs, metals and TPH and disposal at offsite permitted landfills. SCS Engineers was contracted to manage the environmental remediation activities, including compliance with SCAQMD Rule 1466. This rule is designed to minimize fugitive dust emissions from earth-moving activities at sites containing specific toxic air contaminants.

Under Rule 1466, when contaminated earth-moving activities or vehicular movement in contaminated areas occurs, the owner/operator is required to conduct continuous direct-reading, near real-time ambient monitoring of concentrations of particulate matter 10 micrometers or less in diameter (PM_{10}) at upwind and downwind locations, using a federal equivalent method, or an Executive Officer approved method.

THE SOLUTION

Ray Huff, SCS Vice President, has over 27 years of experience in environmental consulting, specializing in air quality/compliance for hazardous substance site investigations, remediation sites, and GHG/air regulatory compliance projects. Mr. Huff investigated several air monitoring options and selected the Aeroqual Dust Sentry PM_{10} monitor because it not only met the requirements set out in Appendix 1 of the Rule and is in the list of SCAQMD pre-approved PM_{10} monitors, but it exceeded those requirements, allowing him to remotely monitor the site during excavation activities, and compile the necessary information from the Aeroqual Cloud server on an on-demand basis.

The Dust Sentry is purpose-designed for remediation and construction site monitoring. It is a robust and rugged design, with weatherproof enclosure and heated PM inlet to minimize false-positive alerts caused by high humidity events. Other features make it easier for consultants to comply with Rule 1466. For example, the rule requires if the PM_{10} site activity contribution (downwind minus upwind concentration) exceeds 25 µg/m^3 averaged over two hours, the owner/operator must cease earth-moving activities and implement additional dust control measures. The Dust Sentry is unique in that it can report 2-hour averaged data with alerts as well other environmental and industrial hygiene time-weighted averages.

Aeroqual also offers a unique site apportionment app for consulting and compliance purposes. This innovative software tool calculates the difference between upwind and downwind data on a site and reports the real time PM_{10} site activity contribution. This can save a lot of man hours. Data can be exported for reporting and real-time values can be used to trigger an SMS or Email alert. If an exceedance occurs the system sends an alert to the site manager to prompt appropriate dust control measures.

EVALUATION

SCS Engineers installed two Dust Sentry PM_{10} monitors and a wind sensor integrated with one monitor on the wind perimeter for plotting dust rose charts. A Hi-Vol sampler was co-located to collect particulate samples for composition analysis by an offsite laboratory. Since the monitoring program was designed to run on a short-term basis, small generators were used to power the instruments during site work hours.

“We were pleasantly surprised at how easy it was to connect to the Dust Sentry Wi-Fi hotspot with a smartphone and get real-time data and alerts on site,” says Mr. Huff. “Once we set up the modems and Aeroqual Cloud and we were able to remotely monitor the site from our office in Long Beach. The software tools available with the instrument and cloud platform are impressive. We found the Dust Sentry system reduced a lot of leg work associated with traditional air monitoring activities. In the future, we will definitely specify Aeroqual air monitoring technology for our upcoming projects.”

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