Supporting commitment to sustainability and responsible mining with environmental intelligence

envirosuite

About the client

A leading North American mining company, focused on providing products that are essential to building a better quality of life for people around the globe.

The mining giant is committed to responsible resource development. The company has a comprehensive sustainability strategy with goals that stretch through to 2050, helping to drive continual improvement in ESG performance.
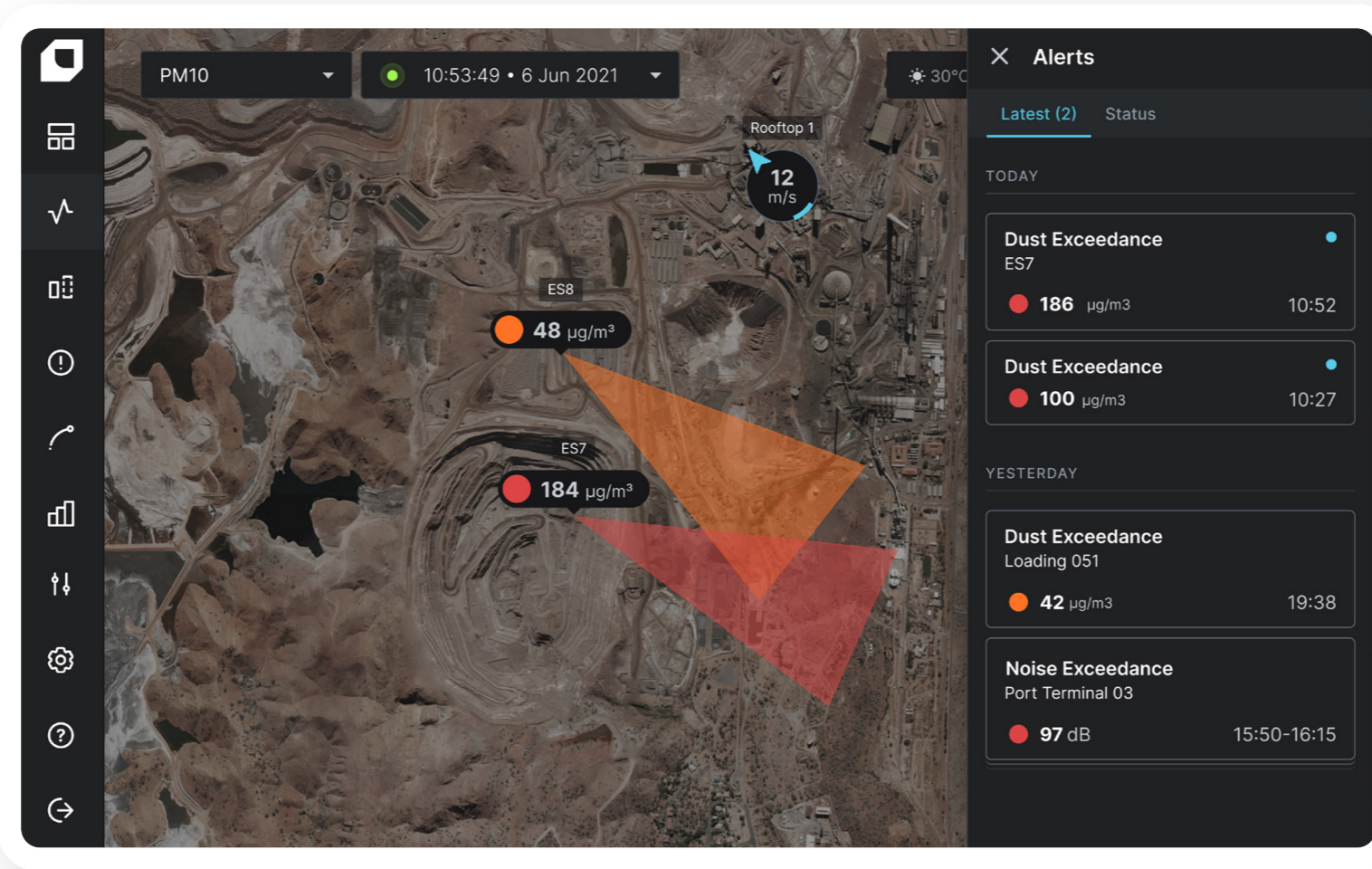
Teams at both sites now use EVS Omnis to get a clear picture of multiple environmental parameters and how they change over time due to constantly shifting weather conditions.

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Our company is committed to providing essential resources the world is counting on to make life better, while caring for people, communities and the environment. Our employees are passionate about sustainability and this recognition is the direct result of their hard work and dedication.

CEO, Mining Company

Project Overview

The mining company is invested in two operations in the region, which are located approximately 8kms and 3kms from their respective community centers. Both operations produce metallurgical coal also known as coking coal which is primarily used to make steel.

The coal producer is a major shareholder at both the mining sites and is responsible for ensuring operational best practices are implemented at the mines. In addition to mining, the business exports steelmaking coal from the mine site to bulk port terminals in the country, which is then carried to the target market.

As important as these mines are for the local economy, they face multiple environmental challenges when it comes to operating near residential neighborhoods. As a responsible resource provider, the mining company is committed to minimizing impact caused by its day-to-day activities.

In order to uphold its strict commitments to sustainability and responsible mining at both sites, the mining company contracted Envirosuite—a global leader in environmental intelligence.

KEY RESULTS

📈 **Increasing production**

💲 **Avoiding fines and costly stoppages**

📉 **Lowering resource costs of dust mitigation**

👤 **Upkeeping responsible and sustainable mining practices**

Solution

The mining enterprise deployed Envirosuite's EVS Omnis platform to enable proactive real-time management of environmental emissions at both of sites.

Envirosuite's EVS Omnis platform uses hyperlocal weather modelling that is fully configurable to each site's requirements. Real-time data is collected from environmental monitoring hardware, which is strategically implemented across both sites, at their boundaries and in nearby communities.

The platform reduces the time and resources to analyze real-time environmental data by generating clear and easy-to-understand insights and reports. Operators at the mining site can act on color-coded insights of unfolding emissions and potential threshold exceedance. Automated compliance reporting can be customized based on what values are important to the ongoing activity and retrieved to provide stakeholders at any time.

Historically, it's been difficult for both mines to achieve operational savings on emissions mitigation without a clear understanding of their source and how they contribute to each site overall.

EVS Omnis combines emission source information and machine learning to pinpoint problematic emission sources across the site. This allows operational teams at both mines to pinpoint problematic emission sources more accurately and effectively.

Operators at the mining site also make the most of Envirosuite's site-specific weather data to prepare for work shifts and periods of high emissions risk. Hyperlocal weather data is provided in actionable insights to provide multi-day risk forecasting and assist with operational planning while minimizing dust emissions.

The process around air quality complaint investigation and directing mitigation efforts has been streamlined with EVS Omnis. The coal producer uses the platform's reverse trajectory modelling capabilities at both its mining sites. This enables teams at the site to trace back likely sources of any air quality complaints received and direct ground staff to the potential sources of those identified as valid. The tracing method allows site managers to save time and effort in their investigation and resolution.

EVS Omnis' blast management solution enables mine operators at both sites to determine the optimum time to carry out blasting activities and minimize the impact of travelling fumes and dust emissions. Both mines are now able to avoid impact to surrounding communities and negative consequences such as severe reputational or financial damage.
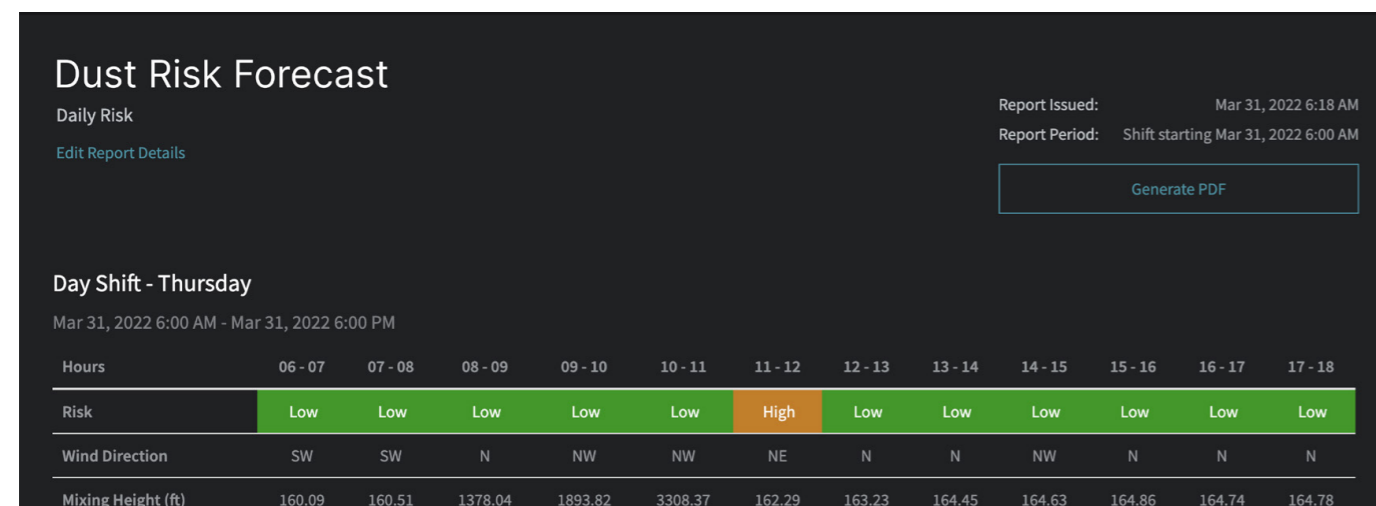
Challenge $\rightarrow$	Solution
Acting on historical data to achieve environmental compliance	Color-coded actionable insights and visualization of the mine's real-time monitoring network
Mitigating site-generated dust emissions	Pinpointing unfolding air quality emission events using arcs of influence
Identifying problematic emissions sources and how much they contribute	Identification of specific areas that are high risk of emissions impact and exceedance at the mine
Understanding when emissions exceed thresholds	Real-time alerting of threshold exceedance to operations team to allocate resources to emissions mitigation
Lengthy complaint investigations	Reverse trajectory modelling to identify the likely source of complaints to confirm or refute responsibility
Determining the best time to blast	Predictive blast management to schedule blasting activities for minimal impact from flyrock, dust fumes and overpressure
Unplanned stoppages due to environmental conditions	Site-specific weather data to support operational decisions and minimise emissions impact from unexpected changes in weather
Reducing water consumption for dust mitigation	Understanding when and how much dust suppressant to utilize with forecasted risk and historical emissions data
Reduced GHG footprint of hauling activities	Dust events are mitigated by combining forecasted risk and a heat map of sources to optimize the watering truck locations
Health and safety risk from dust exposure	Emissions modelling helps with reduction of the amount of overall exposure to dust risk and lowers insurance liability

Dust Risk Forecast

Daily Risk

Edit Report Details

Report Issued: Mar 31, 2022 6:18 AM
Report Period: Shift starting Mar 31, 2022 6:00 AM

Generate PDF

Day Shift - Thursday
Mar 31, 2022 6:00 AM - Mar 31, 2022 6:00 PM

Hours	06 - 07	07 - 08	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13	13 - 14	14 - 15	15 - 16	16 - 17	17 - 18
Risk	Low	Low	Low	Low	Low	High	Low	Low	Low	Low	Low	Low
Wind Direction	SW	SW	N	NW	NW	NE	N	N	NW	N	N	N
Mixing Height (ft)	160.09	160.51	1378.04	1893.82	3308.37	162.29	163.23	164.45	164.63	164.86	164.74	164.78

Results

Success in being able to predict environmental conditions at least 72-hours into the future and managing the impact from blasting activities means the mining company can maintain production levels at both its sites in addition to a securing social license to operate.

Operators at both the sites now use real-time data from EVS Omnis to monitor air quality impact. Teams at the facility get a clear picture of multiple environmental parameters at the site and how they change over time due to constantly changing weather conditions.

Mining activities can now be scheduled 72-hours in advance with confidence using EVS Omnis. Both mines are able to increase production when they know there is a low risk of emissions impact to avoid fines and costly stoppages. Emissions modelling also assists strategies aimed at reducing the amount of overall exposure to dust and lowering insurance liability at the site.

Proactive dispatching of watering trucks is now based on forecasted risk and historical emissions data to understand when and how much dust suppressant to utilize. Instead of having watering trucks react to live observations, dust events are mitigated by combining forecasted risk and a heat map of dust sources to optimize the watering truck locations – saving a significant amount of time and money.

Teams at the sites can confidently direct resources for emissions mitigation knowing the location of the source. The platform's arcs of influence allow personnel to keep track of monitoring network and trigger alerts when they run the risk of exceeding threshold.

Both mines can now transparently show they are upkeeping responsible and sustainable mining practices while reinforcing trust the with their most important stakeholders - their communities.

Looking for more information on odour management?

Find out more about EVS Omnis.

Contact us →

Explore the platform →

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