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Case Study

Mining Company Uses Efficient Near-Reference Monitoring to Lower the Cost of Compliance

Reliable and cost effective air quality data for impact analysis on community and environment

Project
AngloGold Ashanti

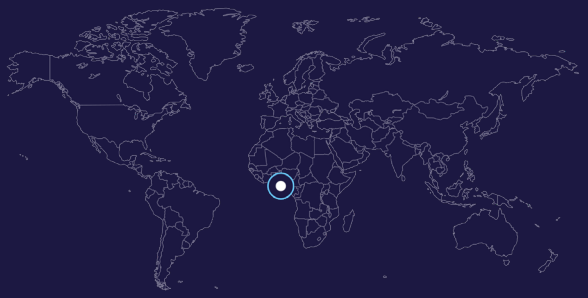
Location
Ghana

Date
Ongoing

Services
AQM60 air quality monitoring station

Measurements
CO, NO_X, SO_2, H_2S, VOCs, O_3, PM_{10}, TSP, Noise, Weather

Sector
Mining



The customer

AngloGold Ashanti is a leading global gold producer operating in 11 countries and listed on five stock exchanges, including the NYSE. AngloGold Ashanti's Ghana's operations consist of Obuasi and the Iduapriem Gold Mine, which together contribute 11% of the company's annual production and employ over 7,000 people. Both locally and internationally the company has a high public profile and takes its corporate social responsibility very seriously.

Obuasi is located in the Ashanti region of southern Ghana. Obuasi is primarily an underground mine operating at depths of 1,500 metres, although some surface mining does occur. Mining here began in 1897 and has been significantly expanded over the years so that its activities have come to increasingly affect local communities – with both positive and negative potential outcomes.

Aeroqual Limited

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The problem

One example of this is the Kwesi Mensah Shaft which is in close proximity to the Ayinam community. In 2011 the question of air pollution impact on the Ayinam community arose. AngloGold took the issues seriously and agreed to conduct a study to quantify the impact.

Because there was no single pollutant known to be causing an issue, AngloGold wanted to survey a number of parameters including particulate, gases, as well as noise. Integrated wind speed and direction measurement would be required to identify the source of any pollution, should it be detected.

Investing in reference analysers and monitoring equipment for this purpose would have been an effective barrier to the study going ahead. The cost would have run into hundreds of thousands of dollars for a problem that might not even exist. Furthermore, AngloGold wanted to monitor at multiple locations, and reference monitoring equipment does not lend itself to being easily deployed and redeployed.

AngloGold needed equipment that would quickly, accurately, and cost effectively detect any potential issues which could then be addressed using more expensive reference monitoring equipment, if so required.

> **"The integrated nature of the AQM60, ensured that the study objectives were met at a relatively low cost"**
>
> AngloGold Ashanti

The solution

Aeroqual's local representative Envaserv Research Consult successfully bid for the project, proposing the Aeroqual AQM60 compact ambient air quality monitoring station as the most reliable and cost effective way to get the information needed.

Envaserv used the AQM60 to measure ambient concentrations of CO, NO_x, SO_2, H_2S, VOCs, O_3, PM_{10}, TSP, noise pollution and meteorological conditions at a total of seven locations each over a 48 hour period.

The measurements were used as a basis for modelling the impact of air and noise pollution on the local population. The report was used to direct internal decision-making at the company as well as providing an objective reference point for discussions with the Ministry of Environment, Science and Technology and Ghana Environmental Protection Agency.

Evaluation

The cost of the study cannot be disclosed, but it came well within budget and significantly less than what would have been required using reference monitoring equipment.

The integrated nature of the AQM60 allowed AngloGold and their stakeholders to get measurements for a large number of parameters – all from one unit that could be moved easily from location to location.

Key findings included identifying sources of H_2S emissions exceeding 150wµg/m^3 such as domestic open drains and heaped refuse bins. The noise dispersion model result showed regulatory compliance in the Anyinam community.

Overall, the aims and objectives of the monitoring study were met and AngloGold Ashanti Obuasi Limited was highly satisfied.