



Air Quality, Noise and Vibration Assessment Services

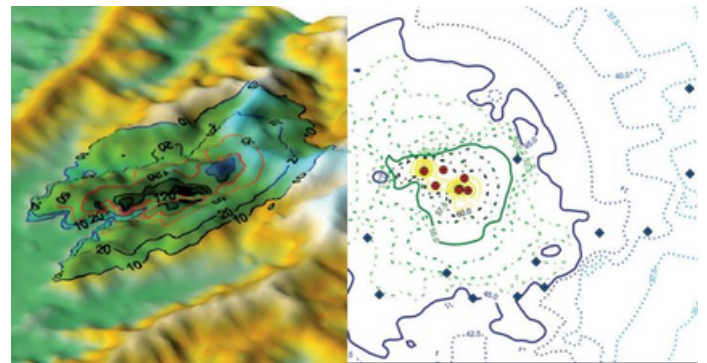
Earth Systems offers cutting edge air quality, noise and vibration assessment services to clients that enable them to make effective environmental decisions. A risk-based approach is used to identify key emissions and impacts, develop management and mitigation measures, and implement international standard air quality and noise monitoring programs suitable for the level of risk and local situation.

Earth Systems has the knowledge and experience to manage all the client's air quality needs, from predictive emission modelling, climate analyses, risk assessments, sampling and analysis, through to project management.

Our practical solutions have the following benefits:

- Reduction of client costs through effective project design.
- Meeting national and international regulatory, policy and permitting requirements.
- Improved local environment with reduced noise and air pollution for communities.

- Auditing and assessment of air quality, noise and meteorological equipment and protocols.
- Regulatory emissions auditing including emissions measurements, emissions control measures and equipment, monitoring protocols including frequency and parameters.
- Project-relevant regulatory compliance, risk management and auditing to national and international environmental guidelines. (e.g. IFC, WHO, USEPA, NPI, NEPM)



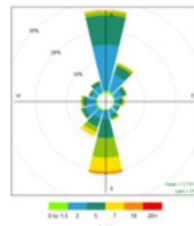
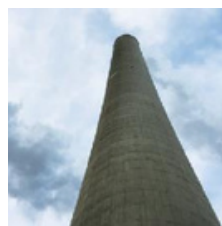
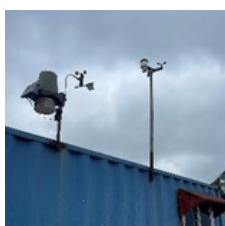
SERVICES PROVIDED

Predictive air quality gas emissions and dust modelling (USEPA AERMOD, CALPUFF, AUSPLUME, TAPM).

- Air quality sampling for gases (e.g. SO_x, NO_x, O₃, CO) and dust (TSP, PM_{1.0}, PM_{2.5}, PM₁₀).
- Meteorology, rainfall and climate analyses.
- Noise, vibration and airblast modelling and assessments.
- Nuisance impacts and mitigation strategies.
- Impact, risk and mitigation assessments.
- Information sessions, training, and capacity building for meteorological and air quality monitoring, including data interpretation and regulatory requirements.

PROJECT EXPERIENCE INCLUDES

- Dust impact models for Eastern Iron, Victoria, Australia.
- Air quality, noise and visual baselines. Meteorological analyses and air quality models as part of the ESIA for the Mako Gold Project, Senegal.
- Air quality, noise and vibration impact reviews. Climatological analysis of B2Gold's Fekola Gold Project, Mali.
- Air quality and noise models and meteorological analyses for the Joint Venture Okvau Gold Project, Cambodia.
- Air quality and noise baselines, meteorological analyses and air quality models as part of the ESIA for the Pan-Aust Phonsavan Copper-Gold Project, Lao PDR.
- Air quality, noise and vibration impact assessment as part of ESIA for construction of the Thakho Hydropower Project, Lao PDR.



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