

HIGH DEFINITION MINERALOGY FOR ENVIRONMENTAL APPLICATIONS

OVERVIEW

At its various sites around the world, the SGS Advanced Mineralogy Network offers over ten QEMSCANs on a commercial fee-for-service basis. Run by mineralogists and technicians with years of characterization experience, data produced by the Advanced Mineralogy Network is monitored by a comprehensive quality control program.

High Definition mineralogy is the quantitative study of minerals, using technologies such as QEMSCAN™, X-ray diffraction analysis (XRD), image analysis and other techniques which are automated. Parameters such as mineral abundance, chemistry, grain size, texture, deportment, association and liberation are determined in a statistically robust manner as opposed to traditional manual methods such as point counting or optical petrography which can be more subjective and time intensive. High Definition mineralogy data can be quantitatively compared with similar data from different tests or samples and the interpretation

and use of such data adds significant value to many applications. High Definition mineralogy has yielded great value in mining applications, and it is anticipated that its areas of use will increase.

Mineralogical services provided by SGS for environmental application includes:

- Mineral identification
- Soil elemental deportment information
- Fly ash mineralogical analysis
- Contaminant mapping in solid inorganic samples
- Dust particle size and composition analysis

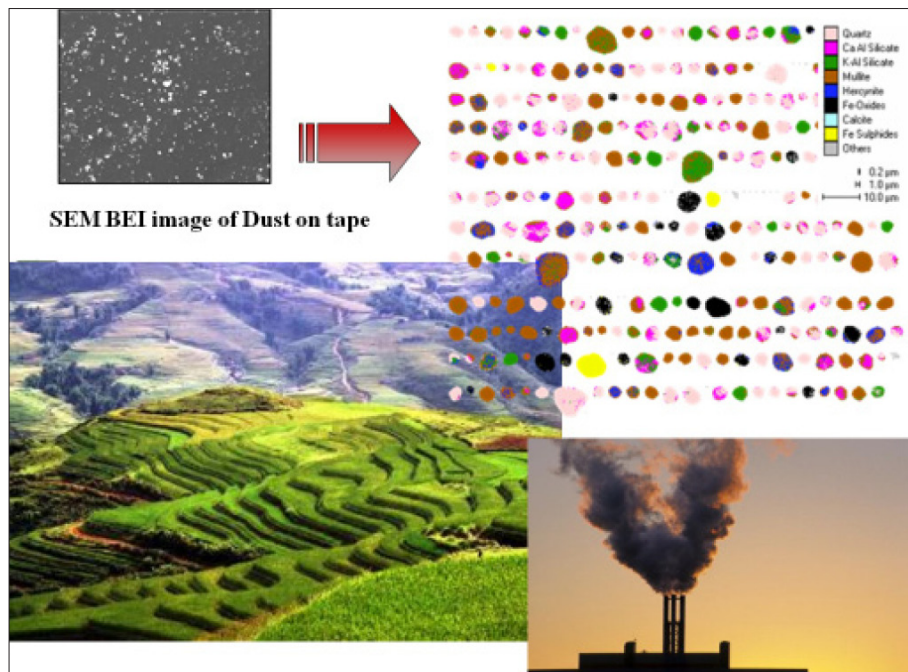
Dust particles, fly ash, soils or specific contaminants can be benchmarked using High Definition Mineralogy, and can be correlated with known characteristics or behaviors (e.g. grind sizes of dust particle in terms of their respiratory danger, fly ash composition in terms of its source or toxicity). Information on mineralogical composition of soils and sediments can be easily obtained. QEMSCAN™ analysis can be also used to analyze soils and

waste materials to track the specific contaminants in the sample on a search and analyze basis.

This capability is enhanced further by the SGS' world-class team of mineralogical experts who ensure both a quality product and, for every project, provide significant interpretive value addition to the High Definition mineralogy product. Other environmental services can be also obtained from the network of associated SGS laboratories.



Figure 1: Example of dust sample collected from a motorway tunnel.



CONTACT INFORMATION

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Figure 2: Example of dust including fly ash particles collected on tape.

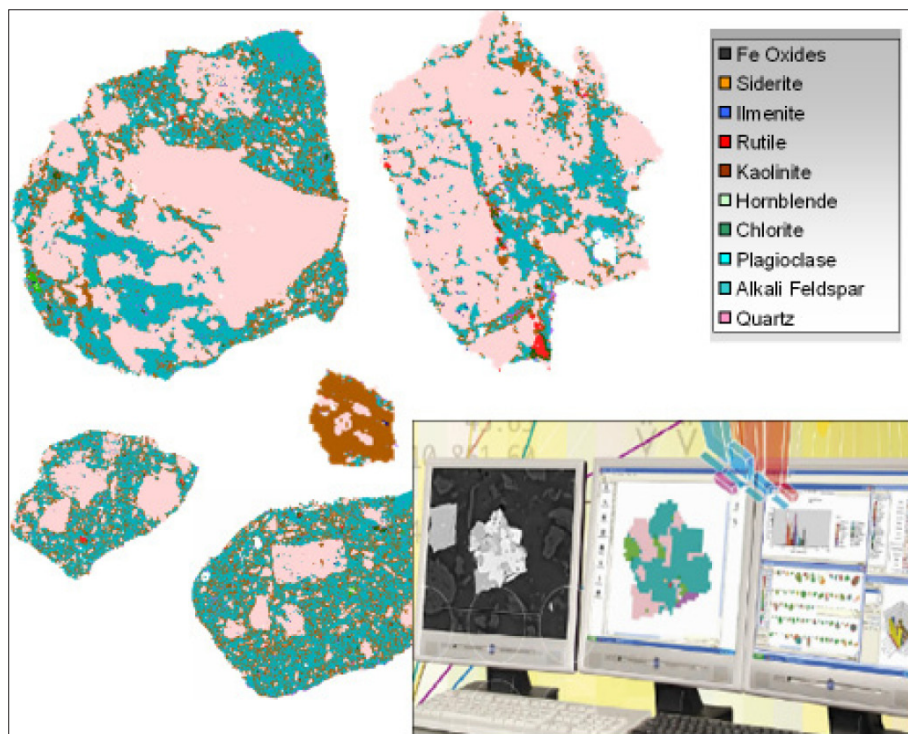


Figure 3: QEMSCAN™ particle maps of a soil sample showing the mineral composition.