

Ecotoxicology Division

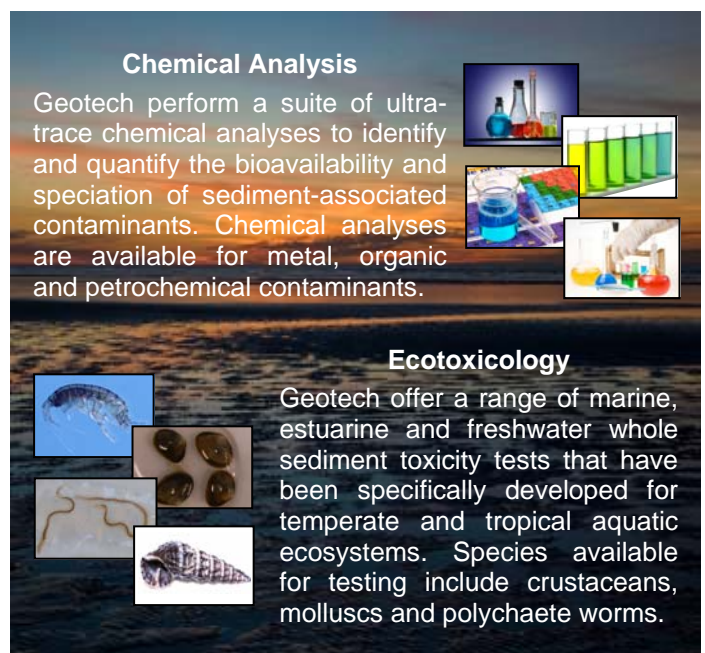
Sediment Quality Assessment

Sediments are recognised as an important source and repository for many contaminants of concern that enter the aquatic environment. In addition to influencing surface water quality, sediments represent a potential source of bioavailable contaminants to benthic biota. Defining the extent of environmental risk posed by sediment-associated contaminants greatly assists in prioritising management options. An understanding of sediment quality may be necessary for:

- Assessing the suitability of dredged materials and mine tailings for ocean disposal
- Quantifying the environmental performance of drilling fluids, muds and cuttings
- Compliance monitoring of licensed industrial activities
- Registering chemical and pharmaceutical products

However, sediment quality assessments based entirely on low reliability trigger values can often lead to unnecessarily expensive remedial action. It is now accepted that an understanding of bioavailability (i.e. the contaminated fraction of the sediment available for uptake by the benthic organism) be incorporated into sediment quality assessments. The ecological risk from sediment-associated contaminants will depend on (i) the chemical speciation and sediment-water partitioning relationships of the contaminant and (ii) the physiology and behaviour of the benthic organism. The regulatory sediment quality assessment framework incorporates these considerations using multiple lines-of-evidence to provide greater confidence when assessing the potential for adverse environmental impacts from contaminated sediments.

In accordance with the sediment quality guidelines, Geotech's Ecotoxicology Division offers a robust assessment service including investigations of sediment chemistry and ecotoxicology.



Chemical Analysis

Geotech perform a suite of ultra-trace chemical analyses to identify and quantify the bioavailability and speciation of sediment-associated contaminants. Chemical analyses are available for metal, organic and petrochemical contaminants.

Ecotoxicology

Geotech offer a range of marine, estuarine and freshwater whole sediment toxicity tests that have been specifically developed for temperate and tropical aquatic ecosystems. Species available for testing include crustaceans, molluscs and polychaete worms.

Combined with our consulting, project management and interpretive reporting expertise, Geotech provides a sediment quality assessment package that offers cost effective management solutions and recommendations to ensure ecological protection.

For additional information and enquiries, please contact:

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