

# ECOTOXICOLOGY

Success Through Science®

Ecotoxicology services that help to assess the toxicity potential of effluent, sediment, soil and chemical substances.

## Aquatic Toxicity Tests

## Sediment and Soil Toxicity Tests

## Chemical Product Testing

## Toxicity Identification/Reduction Evaluations

## Other Ecotoxicology Tests and Services

### Aquatic Toxicity Tests

Maxxam offers freshwater acute toxicity tests for effluent discharge monitoring in aquatic ecosystems (i.e., rainbow trout, *Daphnia magna*, fathead minnows, Microtox®).

Sublethal and chronic tests are also offered for Environmental Effects Monitoring programs involving freshwater and marine species such as: *Ceriodaphnia*, fathead minnows, algae, echinoderm fertilisation, topmelt and *Champia parvula*.

### Sediment and Soil Toxicity Tests

Maxxam provides effective tools for assessing toxicity sources associated with marine and fresh water sediments and soils (i.e., *Hyalella azteca*, *chironomus* spp, marine amphipods, springtails, plants etc).

### Chemical Product Testing

Maxxam can provide ecotoxicity, biodegradation, and physico-chemical testing of chemical products for registration with agencies such as Environment Canada, Health Canada, US EPA, and ECHA. In addition we can provide testing to satisfy Eco-labelling program : EcoLogo™ (Canada certification) and Green Seal® (U.S.certification) requirements.

### Toxicity Identification/Reduction Evaluations (TIE/TRE)

TIEs and TREs are used to identify and characterize toxicants causing toxicity in an effluent, wastewater or sediment. They also provide solutions for reducing or eliminating effluent toxicity. Maxxam's toxicologists and chemists can assist clients in improving effluent quality by conducting chemical and physical analyses and bioassays to identify toxic substances. Once the toxic agents have been identified, methods to improve the effluent quality can be developed and toxicity levels monitored.

## Ecotoxicology Labs totals more than 5000sf with 9 temperature controlled rooms



### Other Ecotoxicology Tests and Services

Studies can be designed to solve specific toxicity problems or answer regulatory requirements, using tests and techniques, such as

- Custom designed bioassays using a variety of test organisms
- Site-specific water quality criteria development
- Water Effect Ratio testing (WER)
- Sediment bioaccumulation tests
- Bioconcentration/ biomagnification tests
- Flow-through bioassays
- Microbiology bioassay (Microtox® solid and liquid phase)
- Testing conducted according to Good Laboratory Practices (GLP)

Our Ecotoxicology scientists team can help you with specific request, such as

- Result interpretation and consulting
- Biological testing method development
- Legal bioassays

### On-Site Investigations

On-site bioassays are used to verify site-specific toxicity sources. Maxxam provides the following services:

- Industrial toxicity audits
- Flow-through artificial stream/ mesocosm bioassays
- In-situ bioassays on various aquatic organisms

### Biomarkers for Exposure Assessment

Biomarkers can be used to assess exposure and potential effects on aquatic species in the environment. Some services Maxxam provides are:

- Screening of Polycyclic Aromatic Hydrocarbons (PAH) in fish bile and crab haemolymph
- Induction of cytochrome P450 in fish
- Endocrine disruption in fish
- Tissue analysis for metals and organic compounds

### Quality Assurance

Maxxam's dedicated Quality Assurance Unit (QAU), supported by Operations Managers, ensures that the Quality Program is implemented and regularly updated and that Maxxam operates at the highest technical, ethical and moral standards.

Maxxam is accredited to ISO/IEC 17025: 2005 for specific tests as listed in the laboratory's current scope of accreditation from:

Canadian Association for Laboratory Accreditation Inc. (CALA)

Washington State Department of Ecology (WDOE)

Maxxam is an analytical services and solutions company that is passionately committed to delivering exceptional science through outstanding service. We set ourselves apart by continually contributing to our customers' success through the application of our knowledge and expertise. We are dedicated to success with responsibility - to our stakeholders, to our communities, and to the environment.