



**BUREAU  
VERITAS**

## ECOTOXICOLOGY TESTING

Ecotoxicology is essential for evaluating the effects of industrial processes on the environment. It combines the disciplines of ecology, toxicology, biology and chemistry to study the effects of pollutants and chemicals on organisms and extrapolate immediate effects to populations and ecosystems.

### HOW CAN BUREAU VERITAS HELP YOU?

Our services range from permit bioassays and related toxicology testing to customized experimental design. We also specialize in working with “difficult” chemicals that are poorly water soluble, reactive or volatile compounds.

#### **Toxicity Identification Evaluation (TIE) and Toxicity Reduction Evaluation (TRE)**

TIE is a site-specific study that isolates, identifies and confirms the causative agents of toxicity in an effluent or sediment. Bureau Veritas’ TIE is based on procedures promulgated by the US EPA. TRE identifies toxic components that may be removed or reduced in an industrial effluent. Typically, TIE is completed before TRE is initiated.

#### **Freshwater and Marine Sediments**

Bureau Veritas has extensive experience testing sediments from contaminated sites and dredged sediments slated for disposal at sea or for bioaccumulation potential. Routine methods for assessing the toxicity of sediment-associated contaminants include:

- 10-d *Chironomus dilutus* Survival and Growth
- 14-d *Hyaella azteca* Survival and Growth
- 10-d Marine Amphipod Survival
- Echinoid or Bivalve Larval Development
- Solid Phase Microtox™
- 20-d *Neanthes arenaceodentata* Survival and Growth
- 28-d *Leptocheirus plumulosus* Survival, Growth and Reproduction

#### **Acute and Sublethal Toxicity**

Acute and sublethal toxicity testing in marine and freshwater supports effluent discharge compliance and environmental effects monitoring programs. Tests are conducted in accordance with applicable Environment Canada, US EPA, and OECD/OCSPP methods.



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### Acute Toxicity Tests:

- 96-hr Rainbow Trout (with or without pH stabilization)
- 48-hr *Daphnia magna*
- 96-hr Fathead Minnow (*Pimephales promelas*)
- 96-hr Stickleback (*Gasterosteus aculeatus*)
- 96-hr Pacific Topsmelt (*Atherinops affinis*)
- 48-hr Mysid Shrimp (*Americamysis bahia*)

### Sublethal/Chronic Toxicity Tests:

- Larval Fish (Fathead minnow) Growth
- Aquatic Plant (*Lemna minor*) Growth Inhibition
- Green Algae (*Pseudokirchneriella subcapitata*) Growth Inhibition
- *Ceriodaphnia dubia* Reproduction
- *Hyalella azteca* Growth
- Echinoid Fertilization
- Bivalve Larval Development
- Microtox™

### ABOUT US

Bureau Veritas is a North American provider of analytical services and solutions to the environmental, energy, food, DNA and industrial hygiene industries with an extensive laboratory network in Canada. Our work supports critical decisions that improve performance, reduce risk or help customers meet safety, quality and regulatory objectives. Founded in 1828, Bureau Veritas is the global leader in testing, inspection and certification services with 78,000 employees in 1,500 locations worldwide.

For over 30 years, Bureau Veritas has been routinely testing more than 25 species of bacteria, algae, plants, invertebrates and fish for ecotoxicity. Our ecotoxicology laboratory is accredited to ISO/IEC 17025 by the Standards Council of Canada for specific parameters on our scopes of accreditation.