



CH2MHILL

Applied Sciences Laboratory



Customized laboratory services deliver the right data the first time



Laboratory Sediment Management Services

YOU NEED
sediment samples analyzed to meet your specific reporting limits.

YOU NEED
it done quickly, thoroughly, and correctly the first time.

Many laboratories claim that they can meet your needs. But the analysis of sediments, overlying water, bioassays, porewater, and tissues is complex. It is often driven by regulatory requirements and risk assessments with low reporting limits that are difficult, if not impossible, to meet unless scientists know how to “clean up” samples and resolve analytical interference factors. Standard Environmental Protection Agency (EPA) methods used by most laboratories often cannot deliver reliable low-level data.

Choosing the wrong lab for the job could delay your project and increase your costs, and yield results that are not adequate to determine the nature and extent of contamination. A setback could mean that you’ll need to start over and resample.

You can avoid this dilemma by using CH2M HILL for your laboratory services. We specialize in custom sediment analysis services tailored to your project’s needs. Our lab successfully uses modifications of EPA methods that yield results that routinely meet reporting limits as low as 1 part per trillion. Because we are experienced with the extraction, cleanup procedures, concentrated analysis, and specialized analyses for sediments, we consistently deliver:

- Accurate, reliable data
- Reporting limits that meet project data quality (DQO) requirements
- Quick turnaround

Our scientists take a “big picture” approach to lab testing—they

understand the significance of lab work on the outcome of projects. They work with clients and experts to establish data quality objectives (reporting limits, precision, and accuracy parameters) up front so that the right procedures can be applied



to the job. This service eliminates much of the uncertainty of fieldwork because teams know precisely what samples to collect. If needed, we can even help clients determine the kind of testing best suited to their projects' needs. The result of this customized approach and expertise is that the right data are delivered quickly and within budget.

Our Success Stories

- Provided laboratory support for a site investigation of **Chevron's Port Arthur, Texas**, refinery, including analysis of sediment and groundwater for PAH and alkylated PAH compounds. Reporting limits: 50 parts per trillion in water and 2 parts per billion (ppb) for soil/sediment. In addition, AVS/SEM analyses were provided to determine the bioavailability of metals in the sediment.
- Conducted laboratory services for site investigation of a former coal gasification/oil storage facility for **Astoria Manufactured Gas** in Astoria, Oregon. Reporting limits: 0.1 ppb in sediments and groundwater.
- Analyzed samples of marine mammal blubber, blood, and milk for low ppb levels of PCB congener and organochlorine

pesticides in support of the U.S. Navy research program **USPAWAR** in San Diego, California.

- Conducted bioassays on soil, water, and sediments for an ecological risk assessment as part of a remedial investigation/feasibility study for **Travis Air Force Base** in Fairfield, California. To protect ecological receptors, site-specific protective (no observed adverse effect level) concentrations were developed using survival, growth, and reproduction tests conducted with amphipods, water fleas, earthworms, and lettuce seeds.
- Assessed potential sediment mercury toxicity to freshwater amphipods (*Hyalloella azteca*) at the former **Fort James Corporation** property in Lebanon, Oregon. Results of bioassay tests demonstrated that mercury found in the sediment was not bioavailable at levels that are harmful to benthic communities. The results played a significant role in obtaining a no further action letter from the Oregon Department of Environmental Quality Voluntary Cleanup Program.
- Conducted sediment toxicity tests for **Union Pacific Railroad** in The Dalles, Oregon, using *Hyalloella azteca*, daphnids, and Microtox™. A novel bioassay-based approach was used for delineating the area needing remediation, resulting in a 40 percent cost reduction versus the conservative default approach.



Four Reasons to Use CH2M HILL Laboratory Services

1 Our sediment analysis expertise ensures accurate, reliable data based on real-world samples.

Our laboratory employs rigorous cleanup techniques and quality control that routinely yield results that meet project data quality objectives.

2 Our customized approach ensures cost control.

Our scientists specialize in tailoring methods to produce results that are within reporting limits for samples with "difficult" matrices. We pride ourselves on the ability to deliver trace-level results on samples with limited volumes. This keeps costs under control by minimizing the risk of having to resample and rerun lab tests to get the required results.

3 Our project delivery system ensures quick turnaround on fast-track projects.

There are no shortcuts to quality. Using the CH2M HILL Project Delivery System, we are able to organize quickly and deliver a high-quality, efficient project on time.

4 Your samples will be tested by scientists who have helped develop sediment quality criteria.

Four of our key personnel have 80 years of collective sediment quality analysis experience. Two of our scientists are emeritus EPA sediment quality experts who were involved in developing the data that set the standards for sediment quality criteria.



Our Roster of Services

- Bioaccumulation Testing
- Tissue Residue/Lipid Analysis
- Polycyclic Aromatic Hydrocarbons (PAH) Analysis
- Polychlorinated Biphenyls (PCBS) Congeners And Aroclors Analysis
- Chlorinated Pesticide Analysis
- Acid Volatile Sulfides/Simultaneously Extracted Metals (Avs/Sem) Analysis
- Metals Analysis
- Total Organic Carbon Analysis
- Porewater Collection And Analysis
- Acute And Chronic, Freshwater And Marine Bioassay Testing
- Mictotox™ Testing

Contacts

For more information on this and other services CH2M HILL's ASL can provide, please contact:

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General Customer Service Questions

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