MOBILE LABORATORY CAPABILITIES

TECHNICAL BULLETIN

Emergency Response and On-Site Environmental Analyses

Maxxam Analytics maintains the largest fleet in Western Canada of mobile laboratories dedicated to environmental analyses. With 3 mobile laboratories in BC, we have the capacity and flexibility to respond quickly to emergency situations requiring rapid, on-site analysis. All analyses performed in the mobile laboratories also follow Maxxam Analytics' QA Program used in the main laboratory. The primary focus of the mobile laboratories is to provide analyses associated with hydrocarbon contamination events.

Data Reporting

Analytical laboratory data generated from the mobile laboratory is reported in the same format as the main laboratory. Data is uploaded from the field to our computerized Laboratory Information Management System. Samples from the mobile laboratory are reported and treated in the same manner as samples analyzed in the main laboratory.

Analytical Methodology

The analyses performed in the mobile laboratories were developed to provide petroleum hydrocarbon analyses of soil and water according to the BC Ministry of Environment's Contaminated Sites Regulation. The hydrocarbon methods for Extractable Petroleum Hydrocarbons (EPH), Benzene, Toluene, Ethylbenzene, and Xylenes and Volatile Hydrocarbons (BTEX/VH) performed in Maxxam's mobile laboratories have been fully validated and accredited according to the Canadian Association for Laboratory Accreditation (CALA) under ISO 17025 standards, and have been accepted by the BC Ministry of Environment for direct reporting without the need for confirmation by the main laboratory.

Progress on remediation projects can be greatly facilitated with the use of on-site laboratories. Maxxam Analytics has provided CALA accredited mobile laboratories for clients at hundreds of sites throughout the province.

Testing Capabilities

The setup time for the mobile lab is two hours including full calibration of the instruments. Average throughput of 30 samples per day of soil and water.

MOBILE LABORATORY CAPABILITIES

Each mobile laboratory is equipped with 2 GCs allowing for simultaneous EPH and BTEX/VH analysis.

- Two full-sized, industry standard GCs
- Autosamplers for continuous unsupervised overnight/weekend analysis
- Purge and trap capabilities
- Custom reporting with chromatograms
- Self-powered
- Secure, water-cooled 10KW on-board diesel generators
- On-board fridge and freezers for sample/extract storage

With the most extensive network of laboratories and service centres throughout Canada, Maxxam provides comprehensive environmental analysis for soil, water and air contaminants. The data collected helps customers comply with environmental regulations and standards that protect human health and the natural environment.

To initiate Maxxam's Emergency Response Service, call:
1-855-MAXXAM-1 (1-855-629-9261)

To increase your team's readiness for an emergency situation, contact your account manager today or:
email: **enviro.ab@maxxam.ca**
telephone: **1-800-386-7247**

Detection Limits

Detection Limits are evaluated using U.S. EPA protocols. Estimated quantitation limits (EQLs) are as follows:

Component	Water (mg/L)	Soil (mg/Kg)
BTEX by P&T	-	0.04
BTEX by Direct Injection (DI)	-	1.0
VH_{6-10} by DI	-	40
EPH (C_{10} - C_{19})	0.12	200
EPH (C_{19} - C_{32})	0.12	200

References
http://www.env.gov.bc.ca/epd/remediation/leg_regs/csr.htm

Analyses

Benzene, Toluene, Ethylbenzene, Xylene(s) (BTEX) and VH_{6-10} (Gasoline Range Organics $C_{6 - C10}$): Soil samples are extracted with organic solvent(s). Two surrogate compounds are added to the samples prior to extraction. The solvent extracts are analyzed using capillary column gas chromatography. VH6-10 range organics are quantified using a reference mixture of aliphatic and aromatic compounds and a flame ionization detector. BTEX compounds are calibrated against BTEX using a photo-ionization detector (PID).

Extractable Hydrocarbons (>C_{10} - C_{19}) and (>C_{19} - C_{32}) Range Organics: Water and Soil samples are extracted with organic solvent(s). Water Samples are tumbled with the solvent. The solvent extracts are analysed using capillary column gas chromatography (flame ionization detector). Diesel and lube range organics are quantified using a reference mixture of aliphatic and aromatic compounds. Results from the mobile laboratory have been proven equivalent to the BC-CSR method using standard reference material client samples.

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