

Technical Update

Laboratory Accreditation Requirements under the Record of Site Condition Regulation (O. Reg. 153/04)

Protecting our Environment

The Record of Site Condition (RSC) - Part XV.1, O. Regulation 153/04 made under the *Environmental Protection Act*, in force October 1, 2004, requires that the analysis of samples taken for the purpose of assessing a contaminant as part of a phase two environmental site assessment or risk assessment or for the purpose of indicating the maximum concentration of a contaminant in, on or under the property in an RSC, be conducted by a laboratory that has been accredited by an internationally recognized accreditation body [e.g., Standards Council of Canada (SCC), or Canadian Association for Environmental Analytical Laboratories (CAEAL)] in accordance with the International Standard *ISO/IEC17025 – General Requirements for the Competence of Testing and Calibration Laboratories*.

What has changed?

On December 5, 2005, the ministry formally recognized CAEAL's new status as an internationally recognized accrediting agency through the regional Asian Pacific Laboratory Accreditation Cooperation (APLAC) and the International Laboratory Accreditation Cooperation (ILAC).

The SCC's status as an internationally recognized accrediting body under the APLAC and ILAC has remained unchanged.

Accreditation requirements under O. Reg. 153/04

A laboratory that performs sediment, soil or ground water analysis as part of a phase two environmental site assessment or risk assessment or for the purpose of indicating the maximum concentration of a contaminant

in, on or under the property in an RSC, must be accredited to the ISO/IEC17025 standard through an internationally recognized accrediting body, such as SCC or CAEAL, and participate in mandatory proficiency testing programs that include specific parameters listed in the Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*. These parameters and sample matrices are listed in Table A and Table B below. For parameters and sample matrices where there is no proficiency testing requirement for accreditation, the laboratory must still be an accredited laboratory, in accordance with the International Standard *ISO/IEC17025 – General Requirements for the Competency of Testing and Calibration Laboratories*.

Environmental testing laboratories have always been encouraged to seek accreditation. Now it's the law for RSC samples.

Who is affected?

- Laboratories that perform analysis on RSC samples
- Owners of property for which the record of site condition is filed
- Qualified Persons as defined by the Regulation

What is laboratory accreditation?

Accreditation is granted by the accrediting body (i.e., SCC, CAEAL) after they receive proof of successful performance from available Proficiency Testing (PT) studies and have conducted an on-site assessment of the laboratory's competence to carry out specific tests, and are found compliant with the requirements of ISO/IEC 17025.

Proficiency Testing programs are developed and made mandatory as a requirement of accreditation, when there are sufficient accredited laboratories performing that analysis. In this way, valid statistics can be applied to identify acceptable and unacceptable analytical performance, for a specific parameter.

Why is the ministry requiring accreditation for laboratories?

Accreditation ensures that laboratories maintain a comprehensive documented quality system consistent with good analytical practice requirements. Accreditation establishes a consistent basis for acceptable quality among analytical laboratories and ensures they adopt a satisfactory quality system to carry out RSC sample analysis.

Conforming to the criteria set for available proficiency testing ensures that the testing procedure is being carried out in the proper manner. Failure to meet these performance criteria can result in automatic withdrawal of accreditation for that particular test procedure.

Which testing procedures must be accredited?

Mandatory accreditation of a specific test procedure applies to any laboratory that provides RSC sample analysis as part of a phase two environmental assessment or risk assessment and the parameter and sample matrix are included in available PT program. The MOE believes that the majority of analytical testing required to be performed for the purpose of this regulation will require test procedure accreditation.

For the analysis of parameters listed in the regulation but not included in Table A and Table B, the requirement that the laboratory be accredited, will ensure that they are compliant with ISO/IEC 17025 standards, through the mandatory on-site assessment performed by the accrediting body.

When must laboratories be accredited for RSC sample analysis?

The requirement to use an accredited laboratory came into effect October 1, 2004.

How will the ministry ensure that only accredited laboratories are used for sample RSC analysis?

When a Qualified Person takes a sample for the purpose of this regulation, they must ensure that an accredited laboratory as specified carries out the sample testing. The Qualified Person shall obtain from the laboratory written confirmation that the laboratory conducted the analysis for the contaminant in accordance the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the *Environmental Protection Act* or other analytical methods for which the laboratory has received written permission from the Director.

How will Qualified Persons know which accredited laboratories to use for RSC analysis?

The Qualified Person may ask a laboratory to produce their "Scope of Accreditation". This is a list of all parameters accredited by the SCC, CAEAL, in a specific matrix. To analyze RSC samples, the laboratory must hold accreditation for the parameters for which SCC has required proficiency testing. The parameters and matrices listed in Tables A and B are current as of the date of publication of this bulletin.

A larger listing of laboratories and their accreditation scopes can be found on the Standards Council of Canada (SCC) and the Canadian Association for Environmental Analytical Laboratories (CAEAL) web sites at www.scc.ca and www.caeal.ca, respectively.

Can laboratories use methods other than those referenced in the Analytical Protocol?

Laboratories may use methods other than those specified in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the *Environmental Protection Act* if the laboratory obtains the written permission from the Ministry Director to use that analytical method for that contaminant.

For further information contact:

Laboratory Services Branch
Ministry of the Environment
125 Resources Road
Etobicoke, ON
M9P 3V6
Phone: (416) 235-6370

Parameters Requiring Testing by an Accredited Method

Table A – Ground Water

Benzo (a) anthracene	Benzo (a) pyrene
Benzo (b) fluoranthene	Benzo (g,h,i) perylene
Benzo (k) fluoranthene	Fluoranthene
Indeno (1,2,3-cd) pyrene	Phenanthrene
Pyrene	
Aldrin	Dieldrin
Chlordane (total)	Endosulphan
Endrin	Heptachlor
Heptachlor epoxide	DDT
Methoxychlor	PCB (total)
1,1-dichloroethylene	1,2-dichlorobenzene
1,2-dichloroethane	1,4-dichlorobenzene
Benzene	Bromodichloromethane
Bromoform	Dibromochloromethane
Dichlorobromomethane	Carbon tetrachloride
Chlorobenzene	Chloroform
Dichloromethane (methylene chloride)	Pentachlorophenol
Ethylbenzene	Trichloroethylene
Tetrachloroethylene	Toluene
2,4,6-Trichlorophenol	
Xylenes (total)	
Chloride	Nitrate
Nitrite	Sodium
Antimony	Arsenic
Barium	Beryllium
Cadmium	Chromium (total)
Cobalt	Copper
Lead	Mercury
Molybdenum	Nickel
Selenium Silver	Thallium
Vanadium	Zinc
Conductivity	

Parameters Requiring Testing by an Accredited Method

Table B – Soil & Sediment

Benzo (a) anthracene	Benzo (a) pyrene
Benzo (b) fluoranthene	Benzo (g,h,i) perylene
Benzo (k) fluoranthene	Fluoranthene
Indeno (1,2,3-cd) pyrene	Phenanthrene
Pyrene	
Antimony	Arsenic
Cadmium	Beryllium
Chromium (total)	Copper
Cobalt	Mercury
Lead	Zinc
Nickel	
Benzene	Ethylbenzene
Toluene	Xylene (total)
Petroleum Hydrocarbons	F1
	F2
	F3
	F4