Intentions Paper Series

Assuring Data Quality for
Environmental Regulation in B.C.

Update to British Columbia's Environmental Data Quality Assurance Regulation

BRITISH COLUMBIA

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Glossary of Terms

Term/Acronym		Definition
ENV	…	British Columbia Ministry of Environment and Climate Change Strategy
CALA	…	Canadian Association for Laboratory Accreditation
CDC	…	BC Centre for Disease Control
CS e-link	…	ENV group email server
Director	…	Means a person employed by the government and designated in writing by the minister as a director of waste management or as an acting, deputy or assistant director of waste management
Directory	…	Directory of Qualified Laboratories
DW	…	Drinking Water
EA	…	Environmental Assessment
ECCC	…	Environment and Climate Change Canada
EDQAR	…	Environmental Data Quality Assurance Regulation
EMA	…	*Environmental Management Act*
EWQA	…	Enhanced Water Quality Assurance Program
IEC	…	International Electrotechnical Commission
ILAC	…	International Laboratory Accreditation Cooperation
ISO	…	International Organization for Standardization
ISO/IEC 17025	…	*General requirements for the competence of testing and calibration laboratories*
ISO/IEC 17011	…	*Conformity assessment -- Requirements for accreditation bodies accrediting conformity assessment bodies*
ISO/IEC 17043	…	*Conformity Assessment – General requirements for proficiency testing*
MRA	…	Mutual Recognition Arrangement
PT	…	Proficiency Test/ing
QA	…	Quality Assurance
QA/QC	…	Quality Assurance / Quality Control
SCC	…	Standards Council of Canada
SI	…	Système international d'unités
WSER	…	Wastewater Systems Effluent Regulations

1 Introduction

Decisions involving the environment are being made all the time in the Province of British Columbia. A mother may be deciding to use tap water for the preparation of infant formula; a clean-up crew may need to decide on the extent of a diesel fuel spill; or the Province may need to decide on the site or environmental impact of a mine. Each decision maker wants to make the best decision for their family, the land owner or the Province. Correct decisions are built on a foundation of information, and in the majority of environmental decisions, laboratory test results provide the objective facts upon which the right information is built.

The Environmental Data Quality Assurance Regulation (EDQAR) is the primary means through which British Columbia (B.C.) controls the quality of laboratory test data. The EDQAR establishes mandatory requirements for laboratories to ensure that their analytical results are acceptable for the intended use by the B.C. Ministry of Environment and Climate Change Strategy (ENV). ENV recently commissioned a paper titled "Laboratory Inter-Jurisdictional Review to Inform the Process of Updating the Environmental Data Quality Assurance Regulation" which reviewed data quality assurance practices for jurisdictions across Canada (JRD Consulting 2017)[1]. This report identified several shortcomings, suggesting that laboratory data quality assurance standards in B.C. falls short of standards in other Canadian jurisdictions.

The Ministry has carefully reviewed the contents of this report and the practices in other Canadian jurisdictions. This Intentions Paper presents the Ministry's proposal to the update of the EDQAR in support improved data quality for environmental regulation in B.C.

The Ministry is requesting stakeholder comment on this Intentions Paper (see Section 8, Invitation to Comment). All comments will be considered as we finalize and update provisions that will meet the Ministry priorities and objectives, and address concerns with the existing provisions in the EDQAR.

[1] It is recommended that the Jurisdictional Review be read in conjunction with this Intentions Paper.

2 Background

2.1 Environmental Data Quality Assurance Regulation

2.1.1 What is the Environmental Data Quality Assurance Regulation (EDQAR)?

The Environmental Data Quality Assurance Regulation (EDQAR) is a regulation (B.C. Reg. 301/90) established in 1990 to ensure environmental data for use under the *Environmental Management Act* (EMA) is accurate and reliable. The EDQAR applies to all laboratories providing analytical services required for permits or other regulatory purposes under the EMA, in addition to the Ministry's own environmental monitoring, compliance and enforcement activities.

Presently, the EDQAR is a legally binding requirement on "persons required to collect samples and submit environmental monitoring data as a requirement of an order, permit, licence, approval or certificate under an enactment administered by the Minister". It imposes a duty to have the sample analyzed by a "qualified laboratory" and submit the results of the analysis not later than 45 days after the date the sample is collected. A "qualified laboratory" means a laboratory that is listed in the directory of qualified laboratories, the "Directory", as qualified to perform a particular test. The Directory is maintained and published by the Ministry. In order for a laboratory to be included in the Directory, the laboratory must achieve formal recognition by the Canadian Association for Laboratory Accreditation (CALA) by participating in the CALA Proficiency Testing (PT) Program[2] or a program approved by CALA. Additionally, for each designated analyte in the laboratory's PT program, the laboratory must ensure that CALA provides the Director of Waste Management (Director) a copy of the results of PT performed by the laboratory on every reference sample provided by CALA, or by a provider approved by CALA.

All B.C. holders of an order, permit, licence, approval or certificates ("authorizations") – in the broadest terms, all industrial, water, wastewater and other operations in the Province – shall identify a qualified laboratory from the Directory and arrange to have the prescribed samples from their authorization analyzed using a qualified laboratory. Upon receipt of the results, they are forwarded to the Ministry to satisfy the requirements of their authorization and this regulation.

At the present time, there are approximately 59 laboratories registered in the Directory, and only 31 are accredited to ISO/IEC 17025 (Data published in the Directory of Qualified Laboratories).

[2] This is a misunderstanding in the EDQAR. CALA does not provide "formal recognition to carry out specified tests" based on proficiency testing. Such recognition is only provided through laboratory accreditation.

2.1.2 Concerns with the current EDQAR model for environmental data quality

The approach taken by the EDQAR is dated and has been overtaken by several developments in the field of laboratory competence as outlined below:

Laboratory Qualification:
In its current form, the EDQAR does not designate a laboratory standard to qualify laboratories. Participation in a PT program is at best a superficial surrogate to attest to the quality of test results, *as* it is not a laboratory standard. *ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories* is a formal laboratory standard developed and adopted internationally for laboratories – the same type of laboratories intended to be qualified by the EDQAR. Without this requirement, the generation of environmental data may be missing the key principles (see below 2.2.1) that underpin the standard and are proven worldwide to ensure the generation of data of known quality.

In addition, formal laboratory accreditation has become the *de facto* standard between jurisdictions and is formally recognized by the Federal Government in its regulations.

Proficiency Testing:
The EDQAR depends heavily on PT to qualify laboratories. Unfortunately, as described below there are several shortcomings in this approach.

Performance on PT alone does not provide an adequate measure of "control" of laboratory processes and in fact relates only a very small portion of the quality assurance that should be present in a laboratory. There is no provision to check if the laboratory carries out its work based on the underlying principles of a laboratory standard, namely: capacity, exercise of responsibility, scientific method, objectivity of results, impartiality of conduct, traceability of measurement, repeatability of test and transparency of process.

In addition, the EDQAR does not prescribe that laboratories must "pass" the PT's – only to participate in it. The EDQAR also does not prescribe that laboratories use ISO/IEC 17043[3] accredited PT providers which is in fact a relatively recent development. It does illustrate, however, how the EDQAR should be updated to reflect developments in this area of international standards. The EDQAR designates a sole-source provider of PT programs: CALA. The ISO/IEC 17043 standard has enabled the development of several high-quality PT providers in the intervening period since the initiation of the EDQAR. By opening the regulation to other providers, qualified laboratories will have other choices to consider for proficiency testing in terms of test selection, service and cost.

Data Quality:
In the absence of an audit program administered by the Ministry or formal laboratory accreditation - and the strength of the processes and ethics it brings to laboratory operations -

[3] ISO/IEC 17043 – Conformity Assessment – General requirements for proficiency testing

there will always be some doubt in the reliability of test data for Ministry decision-making in the Province. British Columbia is fortunate that there are laboratories in the Province servicing provincial programs that are accredited by choice, notwithstanding the requirements of the EDQAR. By updating the EDQAR to require formal laboratory accreditation, all B.C. laboratories – and all test data – will meet the same high standard.

In addition, if ENV has a concern with the quality of test data being submitted, it may want or need to take unilateral action to investigate or understand the ramifications of the matter. As it is presently configured, there is no provision in the EDQAR to compel a laboratory to provide documentation, records or other supporting material in regards to submitted data. There is no provision in the EDQAR for the ENV (or designate) to audit a laboratory's operations to confirm that elements of the quality system are present and operating correctly.

2.1.3 EDQAR Update - Triggering Factors

Notwithstanding the above concerns, the desire to update the EDQAR is triggered by the following factors:

- A trend toward increasing PT failures among laboratories on the "Directory" (Joyce Austin, Personal Communication).
- Desire to align provincial QA/QC requirements with federal requirements in order to facilitate the development of equivalency agreements with the Federal Government;
- Data quality concerns submitted by permittees under the Split Sample Program where analysis of permittee's laboratories (non–accredited) compared to accredited laboratories are significantly different.
- A published report that demonstrates superior proficiency testing performance by accredited vs. unaccredited environmental laboratories (see Figure 1). The definition of suspension means 2 consecutive PT failures of the accredited laboratory, which results in a suspension of their accreditation for a specific parameter. The suspension lasts until the laboratory can pass a PT for that parameter.
- The results from the commissioned report "Laboratory Inter-Jurisdictional Review to Inform the Process of Updating the Environmental Data Quality Assurance Regulation" (March 2017), where it demonstrates that B.C. is the only jurisdiction in Canada that does not use formal laboratory accreditation to support the generation of environmental test data.

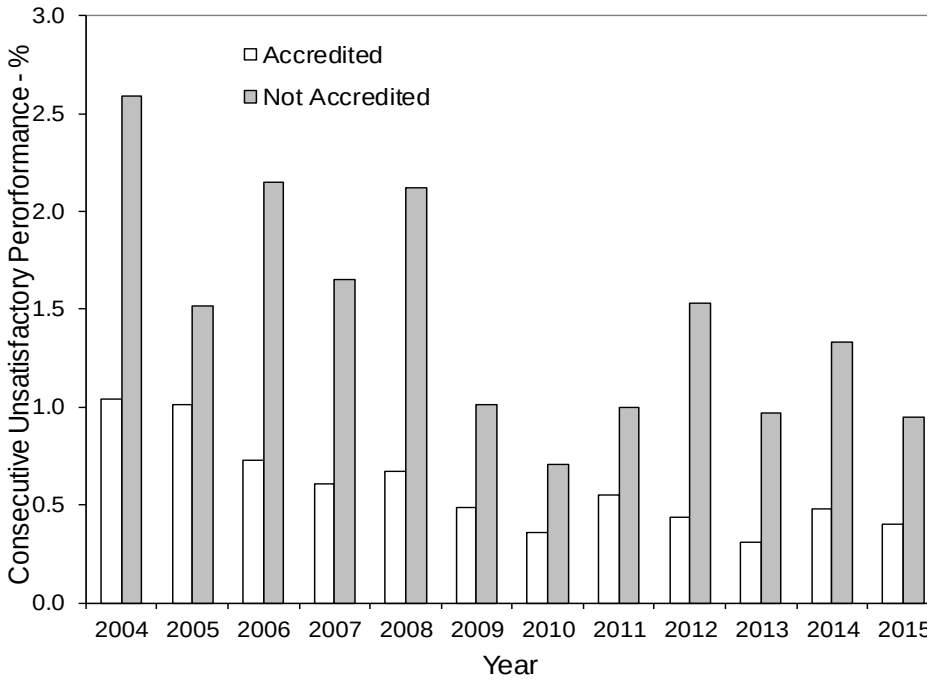

Figure 1. Percentage of consecutive unsatisfactory performance by analyte/matrix combination. Comparison of suspensions (2 consecutive PT failures) for accredited vs. unaccredited laboratories. Adapted from (Middlebrook 2017)

2.2 Laboratory Qualification

In B.C., laboratory qualification is the formal recognition of a testing laboratory to submit test results in support of the ENV's regulatory programs. The Ministry is sensitive to ensuring test results are of the highest quality in order to make appropriate decisions for the protection of human health and the environment. To achieve an adequate level of quality in test results, a laboratory should be demonstrably competent – both technically and administratively – to perform the required tests and manage the testing and ancillary processes. In this paper, there are two considerations to measure laboratory competence – laboratory accreditation and proficiency testing.

2.2.1 What is Laboratory Accreditation?

Laboratory accreditation provides formal recognition of the competence of a laboratory to manage and perform specific tests or types of tests listed in the scope of accreditation (CALA P02-01, p.1). In a sense, the term "accredited laboratory" is a misnomer, and it is more correctly expressed as "a laboratory accredited for a specific list of analytical methods". That is, the laboratory as an organization is recognized as accredited, and the individual analytical methods (more specifically a matrix/parameter combination) are themselves individually accredited by their listing on the laboratory's "scope of accreditation".

The standard applied to accredit laboratories is ISO/IEC 17025 *General requirements for the competence of testing and calibration laboratories*, an international standard developed by the International Organization for Standardization (ISO), with the input of industry experts from around the world. ISO/IEC 17025 was developed around a set of fundamental principles. A laboratory wishing to achieve the production of technically valid test data must first successfully articulate and embrace these principles. The eight fundamental principles are:

- ✓ **Capacity** – Is the concept that a laboratory has the resources (people with the required skills and knowledge, the environment with the required facilities and equipment, the quality control, and the procedures) to undertake the work and produce technically valid results.
- ✓ **Exercise of Responsibility** – Is the concept that persons in the laboratory have the authority to execute specific functions within the overall scope of work – and that the laboratory can demonstrate accountability for the results of the work.
- ✓ **Scientific Method** – Is the concept that the work carried out by the laboratory is based on accepted scientific approaches, preferably consensus-based, and that any deviations from accepted scientific approaches can be substantiated in a manner considered generally acceptable by experts in that field.
- ✓ **Objectivity of Results** – Is the concept that results produced within the scope of work of the organization are mainly based on measurable or derived quantities, and that only persons deemed qualified to do so produce subjective test results, and that such results are noted as being subjective, or are known by experts in that field of testing to be mainly subjective.
- ✓ **Impartiality of Conduct** – Is the concept that the pursuit of technically valid results using generally accepted scientific approaches is the primary and overriding influence on the work of persons performing tests and calibrations, all other influences being considered secondary and not permitted to take precedence.

  Traceability of Measurement – Is the concept that the results produced within the scope of work of the laboratory, are based on an unbroken chain that can be traced to a recognized system of measurement that derives from accepted, known quantities (SI *Système international d'unités*).
- ✓ **Repeatability of Test** – Is the concept that the test or calibration that produced the objective results will produce the same results, within accepted deviations during subsequent testing, and within the constraints of using the same procedures, equipment and persons used during a previous execution of the test or calibration.
- ✓ **Transparency of Process** – Is the concept that the technical and supporting processes within the laboratory are open to internal and external scrutiny, so that factors which may adversely affect the laboratory's pursuit of objective results based on scientific method, can be readily identified and mitigated.

In addition, an accredited laboratory must maintain acceptable performance in proficiency testing to maintain accreditation for individual tests. Based on the on-site assessment and acceptable performance in proficiency tests, a laboratory is recognized as meeting the requirements of the standard by the issuance of a certificate and scope of accredited tests by

an accrediting body that is itself accredited to ISO/IEC 17011[4]. To maintain the accreditation, laboratories must maintain acceptable scores in PT's conducted twice per year, and are subject to on-site assessments every two years.[5]

By using accredited laboratories, customers and regulators have confidence that the measurements being carried out are fit for their intended purpose. In Canada, participation in laboratory accreditation is voluntary unless regulators mandate accreditation in a legal instrument – Act/Statute, Regulation, Policy or Approval – in the respective jurisdiction. The structural and operative elements of ISO/IEC 17025:2017 for a laboratory are summarized in Figure 2 and described in detail in "Complying with ISO 17025: A Practical Guidebook" (United Nations Industrial Development Organization 2009) and numerous online publications.

What about ISO 9001 certification?
ISO 9001 is the international standard that specifies requirements for a quality management system. It applies to any organization, regardless of size or sector and is used to demonstrate the ability to consistently provide products and services that meet customer and regulatory requirements. Since it is not directly aimed at laboratory testing services, it lacks the demonstration of technical competence found in ISO/IEC 17025. For complete confidence in the conduct of laboratory testing, ISO/IEC 17025 is the standard of choice. However, the 2017 revision of ISO/IEC 17025 addresses the discrepancies between these 2 standards. This is done by providing a separate option for laboratories certified to ISO 9001 to use it to establish and maintain their management system, as long as they conform to the additional technical requirements of ISO/IEC 17025 and are assessed for this conformance by an appropriate accrediting body.

2.2.2 What is Proficiency Testing?

Proficiency testing (PT) is a means to measure the ongoing ability of a laboratory to generate acceptable results. In an external PT, a sample or samples (by matrix/parameter) containing the target analyte at known concentrations, is provided by a PT provider for blind[6] analysis by the laboratory. The measured result obtained is reported back to the PT provider, who assesses the laboratory's result against the reference or consensus value for the analytes. Based on this assessment, a laboratory's performance is rated as acceptable or unacceptable, which provides ongoing assurance that the laboratory can produce valid test results for that matrix/parameter combination. Proficiency testing in this fashion is also known as "interlaboratory comparison".

There is an international standard (ISO/IEC 17043) to accredit proficiency testing providers. Use of ISO/IEC 17043 accredited providers ensures that a high standard for performance and interpretation of proficiency tests is maintained.

[4] Further information on conferring accreditation is provided in the associated "Jurisdictional Review".
[5] This is a typical cycle for PT and site assessment, but it may vary between accrediting bodies.
[6] The concentrations of analytes are unknown to the laboratory.

In the case where third-party PT providers do not have a formal PT sample for an analyte, laboratory competence is typically demonstrated by other means such as less formal interlaboratory studies, in-house PT programs (using certified materials), split samples with another laboratory, or the use of other appropriate Quality Assurance (QA) tools.

2.2.3 Accreditation vs. proficiency testing in laboratory competence

Figure 2 below is an illustration of the ISO/IEC 17025 elements that an accredited laboratory must have to receive accreditation:

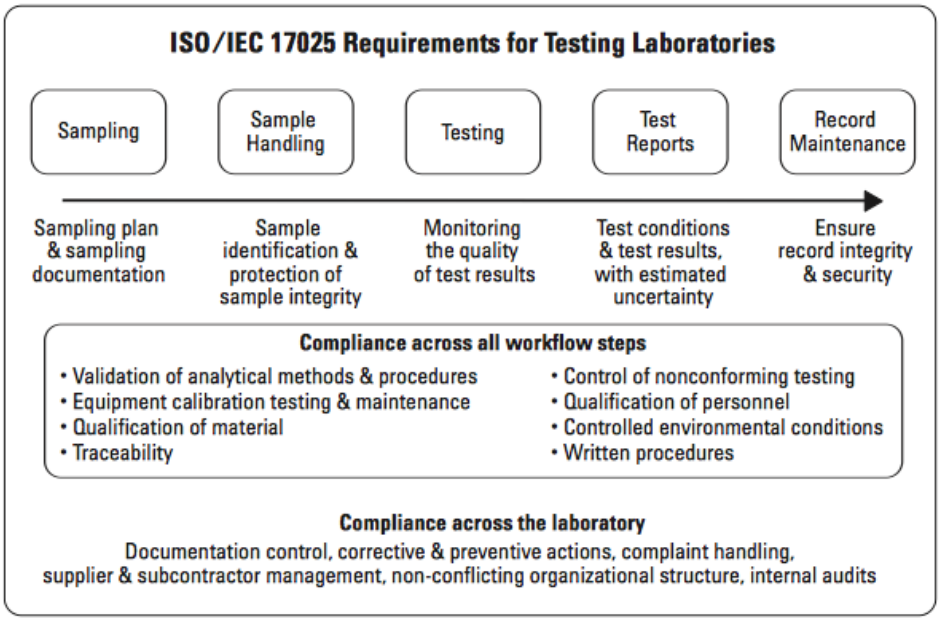

Figure 2. Snapshot of accreditation elements for Testing Laboratories. Source: http://www.chem.agilent.com/Lirary/primers/Public/5990-4540EN.pdf

Laboratory accreditation includes elements of ethics and confidentiality, documentation and record-keeping, method selection and validation, skills and training of personnel, quality control and result uncertainty, recognition and correction of non-conforming work, internal audits and management reviews – in addition to a periodic assessment by external agencies. As mentioned above, satisfactory performance in PT's is an ongoing requirement to maintain accreditation[7]. Test data that is generated by an accredited laboratory is buttressed by a chain of international standards and accreditation bodies that specifically address the production, quality and veracity of this test data. Consequently, an accredited laboratory is more likely than a non-accredited laboratory to produce test data that is:

- Reliable and "fit for purpose" for the decisions to be taken;
- The product of well-established, scientifically-based and validated methods;

[7] This may vary amongst accrediting bodies in other jurisdictions.

- Repeatable and of defined and consistent quality;
- Supported by trained personnel committed to transparency and ethical behavior;
- Comparable to historical data and data from other jurisdictions; and
- Consistent with national and international standards.

Whereas, laboratory competence that is demonstrated only by performance in proficiency testing, is not required to have some or all the elements demonstrated in Figure 2. Proficiency testing is but a small subset of the processes that underpin a fully accredited laboratory. While there may be circumstances where laboratory competence by proficiency testing may be considered adequate, it is no substitute for the rigorous assessment of the laboratory's management and technical underpinnings provided in full by ISO/IEC 17025 accreditation. Some of the risks of using a laboratory that is not fully accredited are:

- Inexperienced staff – lacking the knowledge, qualifications and experience to produce valid test results;
- Use of inappropriate methods, equipment or instrumentation to address regulatory requirements;
- Insufficient resources – leading to inadequate or potentially incorrect test results due to overwork or scheduling difficulties;
- Lack of impartiality – potential conflict of interest in the provision of test results;
- Lack of due diligence or records to support the test results reported; and
- Poor response or accountability to address questionable test results and/or complaints.

3 Ministry Priorities and Objectives

The Ministry has a duty to protect human health and the environment, and a key element in related decisions is confidence in the reliability of sample test results. As stated earlier, test results provide objective facts to the decision-making process, enabling thorough assessment and informed decisions. The priorities and objectives for the update to the EDQAR below should guide the recommendations so they are in alignment with Ministry needs.

Ministry Priorities for the Update to EDQAR

- A robust laboratory standard applied in B.C. that will define the minimum level of quality and service for environmental testing laboratories that aligns with other Canadian jurisdictions.
- An environmental laboratory system in B.C. that supports the objectives of the Ministry, and has the confidence of the government and citizens of B.C.
- Reliable test results to make informed decisions for the protection of human health and the environment.
- Reliable and timely analytical support in response to spills and other environmental emergencies.
- Minimal additional cost to the government of B.C.

Ministry Objectives for the Update to EDQAR

- A system of environmental laboratory oversight compatible with the creation of mutually beneficial agreements with other Canadian jurisdictions.
- Environmental laboratories servicing Ministry programs that are accredited to the laboratory standard ISO/IEC 17025 and operate in accordance with the Standard and the Accrediting Body to produce objective and accurate test results to support Ministry decisions.
- Test data produced for ENV regulatory programs will be sufficiently documented to support and defend the decisions made using these test data.
- Management and oversight of the laboratory accreditation program that has minimal impact on the Ministry or the government of B.C resources.

4 Review of Other Jurisdictions

For the purpose of informing the EDQAR update process, a review of laboratory accreditation in select regulations in the various jurisdictions across Canada was undertaken. The review consisted of a literature search of selected environmental regulations and legal instruments, as well as contact with the persons responsible in each jurisdiction.

Early in the examination, it was observed that the approaches across the jurisdictions can be grouped into two broad categories – the "Protocol Approach" and the "Clause Approach". In the "Clause Approach", a simple clause outlining the requirement for laboratory accreditation is embedded in a legal instrument – usually a regulation or operating approval. The words used may be different depending on the age of the document or the jurisdiction, but the intent is captured in a simple statement, usually quoting ISO/IEC 17025 and ISO/IEC 17011 (or the term ILAC/MRA "signatory"). In the "Protocol Approach", a Ministry document or policy captures the rational and program elements of the laboratory accreditation requirement. This is most often used where the program is more complex than a simple clause can express, for example where an option to use PT performance to qualify laboratories is available. In most jurisdictions, the policy must be referenced in a regulation or operating approval to be legally binding. The most common approach across all jurisdictions is the "Clause Approach".

In limited cases in the far north, the expectation for laboratory accreditation is not formally captured in a legal instrument, but may be present in guidelines or is expected where use of an accredited laboratory is possible. The respective laboratory accreditation information is captured in Figure 3 and reviewed below.

Figure 3. Laboratory Accreditation by Jurisdiction

ILAC Signatory ISO/IEC 17025 Accreditation	X
Non-ILAC Signatory ISO/IEC 17025 Accreditation	(X)
Proficiency Testing Component	&

Subject Regulatory Area*	Province													
	BC	AB	QC	NS	NL	CAN	SK	MB	ON	NB	PE	YK	NT	NU
	Protocol Approach					Clause Approach								
	Reg	Policy	Act	Policy	Policy									
		Note 5												
Drinking Water	N4	X	(X)	X N1	X/&	N7	X	X	X	X	X	X	N7	
Wastewater (non-WSER)	&	X N3	(X)	X/& N3	X/& N3	X N6	X	X N3		X N3	X	X N3	X N3	N2
Soil/Contaminated Sites	&	X	(X)	X/&	X/&		X		X		X	X	N2	N2
Industrial Dischargers	&	X N3	(X)	X/& N3	X/& N3	N2		X N3	N2	X N3		X N3	X N3	N2
Air	&	X	(X)	X/&	X/&		X		N2				N2	

* Major Data producing regulations only; not intended to be comprehensive

Note 1: Bacteria and chemistry in DW laboratory accreditaton is mandatory with no alternative
Note 2: Guideline recommendation or informal expectation (not legally binding)
Note 3: Incorporates laboratory accreditation requirement in operating approval
Note 4: Laboratory oversight by BC CDC EWQA program
Note 5: Alternate Program utilizing proficiency testing suspended
Note 6: Wastewater Systems Effluent Regulation (WSER); accreditation requirement applies in all jurisdictions
Note 7: Not in a regulation. Some communities do on-site (unaccredited) DW testing; remainder are encouraged to use accredited labs if available.

Observations from Jurisdictional Review

Reviewing the approach and process of the requirement for laboratory accreditation can provide some insight into the updating of the EDQAR. The following characteristics can be pulled from this review:

- B.C. is the only jurisdiction in Canada that does not utilize ISO/IEC 17025 to qualify laboratories/environmental test data. Rather, B.C. alone uses PT performance as the primary means to qualify laboratories.
- The approaches across the jurisdictions can be grouped into two broad categories – the "Protocol Approach" and the "Clause Approach". The most common approach across all jurisdictions is the "Clause Approach".
- In terms of the "Protocol Approach", B.C. is unique in the use of a regulation for this purpose, as opposed to a policy. The Quebec approach is also unique in utilizing a stand-alone provincial accrediting body.
- Other than B.C., the jurisdictions that include a PT performance option in their program include three provinces where uptake of this option is mixed – Alberta (suspended), Newfoundland and Labrador (few laboratories – most are accredited) and Nova Scotia (active, mostly small laboratories).
- Quebec maintains a separate accreditation program. It mostly duplicates the services provided by accrediting bodies, although it is not an ILAC MRA signatory. It appears to be very resource intensive and is not considered viable for B.C.
- In terms of environmental testing, the drinking water sector has the greatest requirement for laboratory accreditation, which is not surprising given the direct human health impact and the events associated with the Walkerton incident (Walkerton Inquiry, Report of 2002). In a number of jurisdictions (B.C., NT), the lead agency is the health authority rather than environment, and laboratory accreditation may reflect a medical laboratory focus. A notable exception to this rigorous focus on drinking water is the absence of a legally binding laboratory accreditation requirement for First Nation's drinking water in the federal jurisdiction.
- An informal approach is taken in the Northwest Territories and Nunavut. In these jurisdictions, the requirement for laboratory accreditation is outlined in guidance documents or is a simple understanding.
- As an observation from the review, it is apparent that words used for the designation of "accredited laboratory" vary widely amongst the jurisdictions. CALA and the Standard Council of Canada (SCC) have issued a joint memorandum to suggest common and consistent wording for this purpose (Canadian Association for Laboratory Accreditation and Standards Council of Canada 2016). The wording is "a laboratory whose accreditation has been obtained from an accrediting body that is signatory to the ILAC MRA, using the internationally recognized criteria and procedures outlined in ISO/IEC 17025: General requirements for the Competence of Calibration and Testing Laboratories". Environment and Climate Change Canada (ECCC) has also recognized the

importance of this reference and is developing recommended wording for use in federal regulations (Marc Bernier, personal communication). For the EDQAR update, it is recommended that the wording chosen for reference to laboratory accreditation be made with this in mind.

Further details on the inter-jurisdictional review can be obtained in the formal report "Laboratory Inter-Jurisdictional Review to Inform the Process of Updating the Environmental Data Quality Assurance Regulation" (JRD Consulting 2017), associated with this Intentions Paper (link below):
https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/monitoring/emre/edqar-report2017-03-05.pdf.

5 Proposed Changes to EDQAR

To address the Ministry's priorities and objectives, the following changes to update the EDQAR are under consideration:

5.1 Elements of Proposed Changes

5.1.1 Laboratory Qualification

The Ministry is considering an update to the EDQAR to require formal laboratory accreditation for analytical service to ENV in any capacity. Due to the disparity of the definition of "laboratory accreditation" in the Canadian legal framework, it is recommended that the definition under development by ECCC (2016) guide the formulation of the wording for the EDQAR, excerpted as follows:

> **Accredited Laboratory**
> Any analysis or determination performed for the purposes of these regulations must be performed by a laboratory that holds a certificate of accreditation to International Organization for Standardization standard ISO/IEC 17025, entitled *General requirements for the competence of testing and calibration laboratories.*
>
> **Certificate**
> The certificate referred to must
> (a) Be issued by an accrediting body that is a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA)*;
> (b) Cover the specific parameters to which the analysis or determination relates, and
> (c) Be valid at the time that the analysis or determination is performed.
>
> * – "signatory to the ILAC MRA" means that the accrediting body is itself accredited to ISO/IEC 17011

Three additional elements related to accreditation are also being considered for the EDQAR:

1) Disqualification: If the accreditation for an individual test method is suspended or removed from the "Scope of Accreditation" for any reason, the laboratory is disqualified from submitting results for that test for ENV programs for the duration of the accreditation suspension (with a provision for exception on the authority of the Director).
2) Subcontracting: Tests that are subcontracted (sent to an alternate laboratory due to capability, resources or any test limitation at the receiving laboratory) are subject to the laboratory accreditation requirement as stated above (with a provision for exception on the authority of the Director).
3) The Ministry may discontinue the publication of the "Directory of Qualified Laboratories" in favour of the information published by the accreditation bodies.

Rationale for Proposed Changes:

The requirement for laboratory accreditation to the ISO/IEC 17025 standard for testing laboratories will strengthen laboratory qualification under the EDQAR. It will provide assurance the management, operation and data quality of environmental laboratories will support Ministry programs and decision making. It will also align the B.C. laboratory standard with that of other jurisdictions and facilitate the development of equivalency agreements. Management and oversight of laboratory accreditation program is provided by an independent accrediting body having expertise in this field.

5.1.2 Scope

As demonstrated in the Inter-Jurisdictional Review, there is a dichotomy in application of laboratory accreditation in the generation of regulatory data across Canada, with many regulations exempt. The reason for this was not explored, but it is expected that the relatively recent history of laboratory accreditation and the difficulty to update individual regulations may be contributing factors. It is noted that the wording in the EDQAR under 2(1) and 2(3) in terms of scope is robust:

> *2(1) "A person required to collect samples and submit environmental monitoring data as a requirement of an order, permit, license, approval or certificate issued under an enactment administered by the minister, must, …"*
>
> *2(3) "A person required to collect samples and submit environmental monitoring data as a requirement of an order, permit, license, approval or certificate issued under an enactment administered by the minister, must, on the request of a Director provide to the Director, not later than 45 days after the samples are analyzed, the results of the analysis of standard samples of gases introduced to an emission analyzer, or ambient air analyzer, operated as a requirement of the order, permit, licence, approval or certificate."*

In this update of the EDQAR, the Ministry is considering circumstances in which environmental data is required but may not be subject to the current sections 2(1) and 2(3), such as spills and emergencies or other unforeseen circumstances, and also that monitoring used to support future decisions/applications is subject to the above clauses. The Ministry would like to ensure that laboratory accreditation requirements apply to all test data submitted to the ministry.

Rationale for Proposed Changes:

All environmental data for ENV programs will bear similar reliability and process, regardless of source or situation, and as such will be of known quality for Ministry decision-making. This requirement will also ensure that environmental data used to support Environmental Assessments (EA's) and Permit Authorizations are valid, leading to improved and timely decisions. The reference in the EDQAR to "all data submitted to ENV" will be less prone to error, misinterpretation, or lack of knowledge.

5.1.3 Transition Period

The EDQAR update is considering a two-year transition period for the new requirements, including the requirement for formal laboratory accreditation. During the transition period, the prior requirements for laboratory qualification are to be maintained.

Rationale for Proposed Changes:

The proposed timeframe for the transition will be adequate for existing laboratories to adjust their operations to accommodate the updated EDQAR requirements. It will also minimize disruption to the regulated community while achieving a reasonable schedule to realize the benefits of the updates to the EDQAR.

5.1.4 Laboratory Qualification via Proficiency Testing

While the Ministry has a strong preference for formal laboratory accreditation for test results in its programs, it is recognized that there may be circumstances where it may be beneficial to qualify laboratories via proficiency testing (PT). In this circumstance, the Ministry is considering the addition of the two following conditions:

- That proficiency testing programs meet ISO/IEC 17043 *General Requirements for proficiency testing*, and satisfactory (pass, acceptable) performance be maintained for all analytes whose results are submitted in support of ENV programs; and
- To qualify, a laboratory will need to apply for this accommodation, and receive explicit and ongoing approval in writing by the Director. The application will require a strong justification for the accommodation. It will be subject to a two-year renewal period and include a provision for laboratory inspection, document review, or on-site audit at the discretion of the Director and at cost to the laboratory.

Rationale for Proposed Changes:

This provision provides an option that ENV can consider for laboratories that claim hardship in meeting the accreditation requirement. The application and approval by the Director will enable a thorough examination of the circumstances to ensure they are justified and the renewal period will trigger a periodic re-examination to ensure the accommodation remains valid and in the best interest of B.C.

5.1.5 Environmental Test Data Generated by Online/Continuous Measurement

Environmental data important to Ministry programs is generated by means other than laboratory testing. This is captured superficially by the EDQAR in section 2 (3):

> *"A person required to collect samples and submit environmental monitoring data as a requirement of an order, permit, license, approval or certificate issued under an enactment administered by the minister, must, on the request of a Director provide to the Director, not later than 45 days after the samples are analyzed, the results of the analysis of standard samples of gases introduced to an emission analyzer, or ambient air analyzer, operated as a requirement of the order, permit, licence, approval or certificate."*

While the provisions for laboratory accreditation do not extend to continuous monitoring, it is important to ENV programs and decision-making that there be a high level of confidence in the data submitted. For this purpose, the Ministry is considering an update to the EDQAR to include the following provisions related to continuous or emissions monitoring:

- Qualified operators, with demonstrated skills and training;
- Written operating and maintenance procedures;
- Regular calibration and/or verification of calibration;
- Participation in proficiency testing where available; and
- Records of all operational activities.

Rationale for Proposed Changes:

This provision will maintain confidence in online/continuous/emissions monitoring data for ENV decision-making and for consistent requirements for all operators of online/continuous/emissions monitoring programs.

5.1.6 Laboratories new to B.C.

In order that the requirement for formal laboratory accreditation is not seen as a barrier to trade, the Ministry is considering that the EDQAR include provisions to accommodate new commercial or industrial laboratories. The provisions include:

- Notice to the Ministry of the intent to operate a testing laboratory, where test results will be submitted for Ministry programs;
- Proof of application for laboratory accreditation;
- Successful participation in PT, or an alternate demonstration of data quality where PT samples are not available, prior to the submission of test results to the Ministry; and
- A two-year period for accreditation to be achieved.

Rationale for Proposed Changes:

It is beneficial to the Province to maintain a robust and thriving testing laboratory sector. This provision will facilitate the entry of testing laboratories into the B.C. testing market while continuing to protect the quality of test results supplied for Ministry programs. A laboratory entering the market will be subject to the same conditions for operation that an existing laboratory in the Province would have, so the requirement for accreditation is not perceived as a barrier to trade.

5.1.7 Special Provisions

It is important that the EDQAR foresees and make provisions for special circumstances that may come to pass in laboratory testing and environmental monitoring programs. For this reason, the Ministry is considering the following provisions in the EDQAR:

Where accreditation and proficiency testing for a parameter is not available
In the circumstance where accreditation and proficiency testing are not available, the following provisions will be built into the EDQAR to ensure that data quality can still be demonstrated:

- Formal laboratory accreditation for *related* parameters;
- Laboratory operations for the subject parameter(s) that fulfill the intent of accreditation, including qualified staff, documented method and instrument operation and maintenance procedures, use of suitable measurement standards, regular calibration and/or verification of calibration, and records of all operational activities; and
- Subject to the satisfaction of the Director.

Laboratory of Special Skill or Expertise
It is foreseeable that ENV may require analysis for which formal accreditation/proficiency testing may not be available for the analyte *or related parameters*. In this circumstance, it remains a Ministry requirement that there be some basis upon which to trust the data for use in decision-making by the ENV. The following provisions are considered for the EDQAR to obtain qualifying information to provide assurance that data quality is controlled and demonstrable:

- A laboratory be required to submit qualifying information, in the form of quality manual, staff qualifications, documented test methods, quality control results or other documentation (without limitation) that can be assessed to support the quality of the test results; and
- Subject to the satisfaction of the Director.

If All Else Fails Provision

- It is difficult to foresee all situations or environmental emergencies ENV may face, however, it is likely that test results will be helpful in such situations. To address the

"If All Else Fails Provision", the Ministry is considering a requirement for qualifying documentation to provide assurance that data quality is controlled and demonstrable;

- A laboratory or permittee will be required to assure the Director on the basis of discussions and/or submissions, in the form of quality manual, staff qualifications, documented test methods, quality control results or other documentation (without limitation) that can be assessed to support the quality of the test results; and
- Subject to the satisfaction of the Director.

5.2 Key Benefits

The following benefits accrue to B.C. with the above changes to the EDQAR:

- The international laboratory standard ISO/IEC 17025 is adopted provincially by B.C. This will bring B.C. into alignment with all major jurisdictions in Canada, including ECCC, for the development of mutually beneficial agreements.
- Superior analytical and support processes will be developed by B.C. laboratories as a result of the adoption of ISO/IEC 17025 as the *de facto* laboratory standard for the Province.
- B.C. laboratories will have their ongoing quality performance periodically assessed by qualified, independent assessors and PT, and monitored through an accrediting body that is at arms-length to the Province of B.C.
- Test results generated by B.C. environmental laboratories will have a high level of reliability and ENV can make decisions related to human health and the environment with confidence.
- Management and oversight of laboratory accreditation will be accomplished by the accrediting body that is chosen by the laboratory to provide accreditation – minimizing cost to B.C. to administer the program. This accrediting body will itself be subject to independent conformance assessment under ISO/IEC 17011.
- Improved environmental stewardship.

5.3 Potential Barriers

As mentioned in 2.1.1, there are approximately 59 laboratories registered in the Directory, and only 31 are accredited to ISO/IEC 17025 (Data published in the Directory of Qualified Laboratories). The bulk of the unaccredited laboratories on this list are likely small commercial, municipal or industrial laboratories. Most large laboratories see the benefit of formal laboratory accreditation and long ago developed the technical and management approaches to conform to the requirements of ISO/IEC 17025.

Some of the anticipated challenges to bring the remaining laboratories into conformance are mostly related to cost:

- Direct costs – cost to the laboratory to make the accreditation application to the accrediting body, the cost for on-site assessment, cost to participate in proficiency testing (already a requirement under the EDQAR), and ongoing maintenance costs such as annual fees for biennial assessments. To characterize the direct costs, three accrediting bodies were contacted for estimates.

    - Estimated cost range (per accrediting body estimates) in application year[8, 9] $7K - $13K.
    - Estimated annual cost to maintain accreditation (Assessment Year)[10] $8K - $17K.
    - Estimated annual cost to maintain accreditation (Non-Assessment Year) $2K - $7K.

- Indirect costs – cost to develop the necessary in-house protocols to conform to the requirements of ISO/IEC 17025. The real cost for these resources are dependent on a multitude of factors specific to the individual laboratory and is difficult to generalize. It should be noted that conformance to the requirements of ISO/IEC 17025 has been demonstrated many times over by laboratories across Canada, both large and small. While there may be isolated difficulties, the review of Canadian jurisdictions demonstrates that it is achievable in the time frame proposed in the EDQAR update. The Ministry will consider extended time or alternate arrangements upon justification from the laboratory to the Ministry and subject to the satisfaction of the Director.

[8] Estimated range of costs for a simple laboratory situation – 1 physical plant, 1 field of testing, 1 program specialty area, 5 appendices. Includes accrediting body and PT costs, and estimates for applicable expenses.

[9] Example only – costs can/will vary significantly based the on physical, analytical, and situational complexity for each individual laboratory. An estimate from an accrediting body based on a laboratory's real situation is recommended.

[10] Accreditation requires a biennial Site Assessment cycle. Costs associated with years within which a Site Assessment is carried out are therefore normally higher than years within which there is no Site Assessment.

6 Compliance and Enforcement

The Ministry's ability to protect human health and the environment is directly linked to the availability of timely and good quality test data, so compliance with the updated EDQAR requirements is important. The Ministry proposes to verify compliance with the new requirements by the following methods:

6.1 Accreditation Verification

Accreditation verification will demonstrate that test results for Ministry programs meets Ministry requirements for laboratory/test accreditation as follows:

- A laboratory intending to generate test results for Ministry programs will arrange for ENV to receive the accreditation certificate, scope of testing and PT results from the accrediting body or PT provider; and
- Permittees or others submitting data to the Ministry will have to demonstrate during inspections and while submitting data to the Ministry that:
    - Their laboratory and the respective test method (matrix/parameter) are ISO/IEC 17025 accredited;
    - If their laboratory of choice loses test accreditation during a period, the actions taken to ensure only accredited test methods for sample test results were submitted for Ministry programs;
    - They have a follow up process to ensure submitted data (if any) was not impacted by the loss of test accreditation; and
    - A permittee that changes laboratories will notify ENV of the change and arrange for accreditation/PT information to be supplied.

6.2 Accreditation/PT Updates and Notifications

It is anticipated that there will be a need for ongoing management of test result submissions that may be impacted by accreditation suspensions, reinstatements, PT failures and related matters. To address the matter of test result management in relation to laboratory qualification, the laboratories will arrange for:

- Accredited laboratories, ENV to receive notices of suspension of test accreditation and/or reinstatement from the accrediting body, with the permission of the laboratory; and
- Laboratories qualified by proficiency testing performance, see 6.3 below.

6.3 Proficiency Test Performance Notifications

For laboratories that may be qualified by PT, information related to their PT performance will be necessary to ensure the test results generated for Ministry programs is fit-for-purpose. For this reason, laboratories qualified under the proficiency testing option will arrange for ENV to:

- Receive and assess the nature of the PT program (number of samples, number of rounds);
- Receive all PT results and assessment reports from the PT provider with the permission of the laboratory;
- Receive notices of PT failures from the PT provider with the permission of the laboratory. In the event of a PT failure, the laboratory will provide a follow-up process to ensure submitted data (if any) was not impacted; and
- Receive a notice of reinstatement and evidence of satisfactory PT performance to demonstrate that test results will be fit-for-purpose.

6.4 Laboratory Qualification under the Special Provisions

For laboratories that may be qualified under the special provisions, compliance will be based on submission of information attesting to the quality of the test results to the satisfaction of the Director.

7 First Nations Consultation

The Province of British Columbia has a duty to consult and where required, accommodate First Nations whenever it proposes a decision or activity that could impact treaty rights or aboriginal rights (including title) – claimed or proven. ENV values this duty and will consult with First Nations on the EDQAR update by:

- Reaching out to the First Nations Health Authority; and
- Consulting with all bands in B.C. via e-mail, letter and if needed, in-person public meetings.

8 Notification, Education and Training

The Ministry recognizes the need for both internal and external communication to ensure the changes are known, understood and implemented. To support and facilitate this, the Ministry will provide an outreach and education campaign directed at three populations – the users of test data within ENV, the regulated community that use the laboratories to produce regulatory data, and the laboratory community itself.

8.1 Internal B.C. Ministry of Environment and Climate Change Strategy

The adoption of ISO/IEC 17025 as a laboratory standard will require some internal education and training to ensure there is a common understanding of what it means and how it is expected to impact the Ministry. It is expected that this training will be addressed by:

- Webinar and presentations;
- Informal discussions; and
- Circulation of literature directed at the regulated and laboratory communities.

8.2 Regulated Community

The regulated community are those municipalities, industries and others that are regulated under the EMA. There would appear to be two components to this group that will be impacted by the changes to the EDQAR, as well as a general notification to other entities that may be impacted indirectly:

- Municipalities and industries that have internal laboratories that generate test results that are directed to the ENV to satisfy the requirements of an order, permit, licence, approval or certificate. These organizations will need to be informed of the EDQAR changes that will impact their laboratory operations, including the requirement for laboratory accreditation;
- Municipalities and industries that contract their regulated testing to commercial laboratories will need to be informed of the changes to the EDQAR to ensure they are contracting with laboratories that are accredited after the phase-in period is complete; and
- A general notification of the EDQAR changes to Municipalities, Regional Districts and other sub-regions for their information.

To support and facilitate this, the Ministry will provide an outreach and education campaign directed at the regulated community consisting of the following:

- Factsheets and guidance documents;
- Communication in the form of letters and e-mails, and CS e-link to regulated industries;
- Webinars and other public outreach;
- Internal ENV consultation with Regional Operations Branch; and

- Directed communication on this topic with ENV program Managers, Directors and Executive team.

8.3 Laboratory Community

All laboratories will require information on the changes to the EDQAR, including laboratories that may not be listed on the "Directory" maintained by the ENV. To support and facilitate this, the Ministry will provide an outreach and education campaign directed at the laboratory community consisting of the following:

- Factsheets and guidance documents;
- Communication in the form of letters to laboratories;
- Webinars and other public outreach; and
- Laboratories will also be directed to the accrediting body for training and support during the transition.

9 Invitation to Comment

Comments on the proposed provisions for the update to the EDQAR can be provided to the Ministry of Environment and Climate Change Strategy by email attachment or by mail at the address listed below.

All comments received through this process will be reviewed and carefully considered by the Ministry prior to proposing future legislative and regulatory amendments to the EDQAR, which are anticipated to occur in the fall of 2018 or later.

Before submitting a response, interested parties are invited to participate in an information session scheduled to be held on November 14 and 15, 2018. If you are interested in receiving information about or participating in the information session, please contact JRD Consulting (James Downie) at the email or address below for further details.

The Ministry has prepared consultation questions and included them in this Intentions Paper. We encourage those interested to submit comments on the proposed process using the prepared consultation questions or by separate submission if desired.

All submissions will be treated confidentially by Ministry staff and contractors when preparing consultation reports. Please note, however, that comments you provide and information that identifies you as the source of those comments may be publicly available if a Freedom of Information request is made under the *Freedom of Information and Protection of Privacy Act*.
If you have any questions or comments regarding this Intentions Paper, or comments on the Ministry's schedule for the consultation process, please contact JRD Consulting (James Downie) who has been contracted to manage consultation comments, at:

Email: Edqarupdate.comments@jrdconsulting.ca

Mail: **Ministry of Environment and Climate Change Strategy – EDQAR Update**
Attention to: Carol Busse
4th Floor, 525 Superior Street
Victoria, BC V8V 0C5

Comments to the Ministry should be made between **October 17 to December 17, 2018.** Thank you kindly for your time and comments.

10 Consultation Questions

The following questions are based on the ministry's policy intentions paper for revising the Environmental Data Quality Assurance Regulation (EDQAR). The intentions paper can be downloaded from the ministry website at:

- https://www2.gov.bc.ca/assets/download/DCB2F3C5B28F47D2ABBF4BFF44C9B288

General Questions

The ministry has a duty to protect human health and the environment, and the best decisions can only be made with objective and reliable test results. The EDQAR will be strengthened to incorporate a formal laboratory standard for the qualification of laboratories, leading to improved confidence and reliability of test results. It will also facilitate reaching "equivalency agreements" with other levels of government, which will lead to increased efficiency and cost savings.

G1. Overall, please indicate your level of support for the proposed revisions to the EDQAR described in the intentions paper:

Please select one box from the scale below (1= Not at all supportive; 6= Extremely supportive)

	1	2	3	4	5	6	
Not at all supportive	☐	☐	☐	☐	☐	☐	Extremely supportive

G2. What are the reasons for your choice?

G3. Do you have any general comments about the ministry's proposed revisions to the EDQAR?

PROPOSED UPDATE

1. Laboratory/Test Accreditation

Section 5.1.1 of the EDQAR Intentions Paper (IP) sets out to make formal accreditation a requirement for test data destined for submission to ENV to satisfy monitoring requirements or other purposes under the EMA. Accreditation provides formal recognition of the competence of a laboratory to perform tests in conformance with a formal laboratory standard – ISO/IEC 17025.

1.1 Please indicate your level of support for the proposal to require formal accreditation for the laboratory/test methods that generate test results for ministry programs.

Please select one box from the scale below (1= Not at all supportive; 6= Extremely supportive)

1	2	3	4	5	6

Not at all supportive	☐	☐	☐	☐	☐	☐	Extremely supportive

1.2 What are the reasons for your choice in question 1.1?

1.3 Do you have any other comments regarding the ministry's intention to require ISO/IEC 17025 accreditation for laboratories and test methods that produce analytical data for ENV programs?

1.4 Do you support the suggested wording to be used for the update to the EDQAR related to laboratory accreditation? Please offer suggestions for alternate wording if warranted.

2. Scope of Application

Section 5.1.2 of the IP sets out that formal laboratory/test accreditation should be a requirement for all test data destined for submission to ministry programs.

2.1. Do you support the scope of application for laboratory/test accreditation that is being for the generation of all regulatory data to which it can be applied for ENV programs? If not, please explain why.

3. Phase-In Period

In Section 5.1.3, the EDQAR update is considering a two-year update period for the new requirements, including the requirement for formal laboratory/test accreditation. During the transition period, the prior requirement for laboratory qualification is to be maintained.

3.1. Do you have any comments regarding the ministry's intention to have a phase-in period of two years for the new requirements including laboratory/test accreditation?

4. Laboratory Qualification by Proficiency Testing

While the ministry has a strong preference for formal laboratory/test accreditation for test results in its programs, it is recognized there may be circumstances where it will be beneficial to qualify laboratories using the current EDQAR requirement for proficiency testing.

4.1 Please indicate your level of support for the retention of laboratory qualification via proficiency testing as practiced by the EDQAR for use in special circumstances.

Please select one box from the scale below (1= Not at all supportive; 6= Extremely supportive)

	1	2	3	4	5	6	
Not at all supportive	☐	☐	☐	☐	☐	☐	Extremely supportive

4.2 What are the reasons for your choice in question 4.1?

4.3 It is proposed that a laboratory seeking to utilize laboratory qualification by proficiency testing be required to provide a rationale for the accommodation, receive approval of the Director and that approval will be for a limited time period. Please comment on the proposal to set strict conditions on the use of this accommodation.

5. Environmental Test Data Generated by Online/Continuous Monitoring

Section 5.1.5 of the IP proposes that environmental test data generated by online/continuous measurement have an element of quality management to ensure a high level of confidence in the data. While the provision for laboratory/test accreditation does not extend to online/continuous monitoring, certain elements of quality management are proposed in the EDQAR update revisions.

5.1 Do you have any comments or suggestions regarding the proposed revisions for online/continuous measurements that generate test data for ministry programs?

6. Provision for Laboratories New to B.C.

The proposed amendment to the EDQAR include a provision for laboratories new to B.C. in order that the requirement for laboratory/test accreditation not be seen as a barrier to trade. The provisions include utilizing laboratory qualification via proficiency testing as an interim requirement to demonstrate data quality and a two-year period for laboratory/test accreditation to be achieved.

6.1. Please comment on the provision in the proposed EDQAR revisions for laboratories new to B.C.

6.2. Do you have any comments regarding the use of laboratory qualification via proficiency testing or the two-year period for accreditation to be achieved in this process?

7. Special Provisions

Section 5.1.7 of the IP proposes several special provisions to take into consideration special circumstances that the ministry may face with respect to laboratory testing. This includes (but is not limited to) the following potential situations:

- Accreditation and proficiency testing for a parameter is not available;
- Laboratory of special skill or expertise; and
- An “If all else fails” provision for unforeseen circumstances.

7.1 Do you have any comments or suggestions regarding the proposed special provisions for the revised EDQAR?

8. Assuring Compliance

Section 6 of the IP sets out compliance and enforcement provisions that will enable ENV to confirm that the changes proposed in the EDQAR update are implemented within the environmental sector.

8.1. Please comment on the provision in the proposed EDQAR revisions for accreditation verification (Section 6.1).

8.2. Please comment on the provision in the proposed EDQAR revisions for accreditation updates and proficiency testing performance notifications (Sections 6.2 and 6.3).

9. Additional Comments

Do you have any additional comments or suggestions for the Ministry regarding the proposed revisions to the regulation?

Please add comments on other aspects of the Intentions Paper to completely address any concerns you may have. All comments will be read and considered.

Thank you very much for your comments and feedback a link to this response form can be found at:

https://www2.gov.bc.ca/assets/download/93F48EE3C58E46E5851F65B662AB2CAC

11 Works Cited

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